Understanding the Authorial Writer: a mixed methods approach to the psychology of authorial identity in relation to plagiarism.

UNIVERSITY OF DERBY

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A Mixed Methods Approach to the Psychology of Authorial Identity in Relation to Plagiarism.

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Contents

List of Figures

The following table lists all of the figures included in the main body of the thesis. Note that this does not include any figures on the cover page of the thesis, or those included in the appendices section.

List of Tables

The following list includes all of the tables included in the main body of the thesis. Note that this does not include tables in the current section, or those included in the appendices.

List of Abbreviations

The following table lists the abbreviations and acronyms used throughout the thesis. Terms are stated fully on their first use in each chapter.

Abbreviation	Meaning
ANOVA	Analysis of Variance
ASSIST	Approaches and Study Skills Inventory for Students
CETL	Centre for Excellence in Teaching and Learning
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CritTTPsych	Critical Thinking Toolkit for Psychology
CTT	Classical Test Theory
CVR	Content Validity Ratio
EAP	English for Academic Purposes
EFA	Exploratory Factor Analysis
ERIC	Educational Resources Information Center
ESOL	English for Speakers of Other Languages
FA	Factor Analysis
FE	Further Education
GPA	Grade Point Average
HE	Higher Education
ICAC	Independent Commission Against Corruption
IPA	Interpretative Phenomenological Analysis
IPCC	Inventory of Processes in College Composition
IRT	Item Response Theory
IQ	Intelligence Quotient
LSE	London School of Economics
MAP	Minimum Average Partial
MAS-UK	Mathematics Anxiety Scale - United Kingdom
MRS	Mean Relevance Score
NS	Native Speaker
NNS	Non-native Speaker
PA	Parallel Analysis
PAF	Principal Axis Factoring
PA-PAFA	Parallel Analysis using Principal Axis Factoring
PCA	Principal Components Analysis
R	R Project Statistical Package
RMSEA	Root Mean Square Error of Approximation
SAQ	Student Authorship Questionnaire
SABAS	Student Attitudes and Beliefs about Authorship Scale
SEM	Structural Equation Modelling
SESW	Self-Efficacy in Scientific Writing Scale
SME	Subject Matter Expert
SPSS	Statistical Package for the Social Sciences
SRMR	Standardised Root Mean Square Residual
T1	Time-point 1
T2	Time-point 2
TPACK	Technological Pedagogical Content Knowledge
UoD	University of Derby
UK	United Kingdom
US	United States
WAC	Writing Across the Curriculum
WID	Writing in the Disciplines
WTL	Writing to Learn

Abstract

Academic writing is an important part of undergraduate study that tutors recognise as central to success in higher education. Across the academy, writing is used to assess, develop and facilitate student learning. However, there are growing concerns that students appropriate written work from other sources and present it as their own, committing the academic offence of plagiarism. Conceptualising plagiarism as literary theft, current institutional practices concentrate on deterring and detecting behaviours that contravene the rules of the academy. Plagiarism is a topic that often elicits an emotional response in academic tutors, who are horrified that students commit these 'crimes'. Recently, educators have suggested that deterring and detecting plagiarism is ineffective and described moralistic conceptualisations of plagiarism as unhelpful. These commentaries highlight the need for credible alternative approaches to plagiarism that include pedagogic aspects of academic writing.

The authorial identity approach to reducing plagiarism concentrates on developing understanding of authorship in students using pedagogy. This thesis presents three studies that contribute to the authorial identity approach to student plagiarism. Building on the findings of previous research, the current studies used a sequential mixed-methods approach to expand psychological knowledge concerning authorial identity in higher education contexts.

The first, qualitative, study used thematic analysis of interviews with 27 professional academics teaching at institutions in the United Kingdom. The findings from this multidisciplinary sample identified that academics understood authorial identity as composed of five themes; an individual with authorial identity had confidence; valued writing; felt attachment and ownership of their writing; thought independently and critically; and had rhetorical goals. In addition, the analysis identified two integrative themes representing aspects of authorial identity that underlie all of the other themes: authorial identity as 'tacit knowledge' and authorial identity as 'negotiation of identities'. The themes identified in the first study informed important aspects of the two following quantitative studies.

The second study used findings from the first study to generate a pool of questionnaire items, assess their content validity and administer them to a multidisciplinary sample of 439 students in higher education. Psychometric analyses were used to identify a latent variable model of student authorial identity with three factors: 'authorial confidence', 'valuing

writing' and 'identification with author'. This model formed the basis of a new psychometric tool for measuring authorial identity. The resultant Student Attitudes and Beliefs about Authorship Scale (SABAS) had greater reliability and validity when compared with alternative measures.

The third study used confirmatory factor analysis to validate the SABAS model with a sample of 306 students. In addition, this study identified aspects of convergent validity and test-retest reliability that allow the SABAS to be used with confidence in research and pedagogy.

The overall findings of the combined studies present a psycho-social model of student authorial identity. This model represents an important contribution to the theoretical underpinnings of the authorial identity approach to student plagiarism. Differing from previous models by including social aspects of authorial identity, the psycho-social model informs future pedagogy development and research by outlining a robust, empirically supported theoretical framework.

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In particular, Dr. Maggie Gale, who supervised my undergraduate thesis and encouraged me to present research at conference in Venice. Without her accurate evaluation of my faults, I would not have dared to challenge myself and attempt a doctoral thesis. Another influential figure in my academic career is Mr. Kevin Silber, whose friendship and mentoring has enabled me to become a better lecturer. I hope that I will inspire some of my own students to teach psychology in the same way that he has inspired me. Dr. Jane Montague is the final member of staff in the psychology department that I would like to mention. Her examination of my MRes thesis gave me confidence and she has been the source of many opportunities to expand my teaching experiences.

Aside from the psychology department, my work has benefitted from the research environment at the University of Derby. I am grateful to the Teaching Informed by Research fund for my studentship and to Professor Paul Bridges for his willingness to engage with PhD students on all aspects of research. The administrative support of the research office has also facilitated the completion of this thesis and I would like to thank the members of this team, including those who have moved on to other roles.

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Introduction

Plagiarism is currently a major concern in universities around the world (Park, 2003) and many institutions have taken steps to try and manage the problem (Sutherland-Smith, 2008). There are recurring articles in the public media blaming the internet for an explosion in cheating (e.g., Clark, 2012; Morgan & Hauck, 2011) and famous plagiarists have been subject to media scrutiny (e.g., Oltermann, 2011[1]; Sellgren, 2011[2]). Clegg and Flint (2006) have warned of a moral panic about plagiarism, and universities have been increasing efforts to deal with academic offences (Carroll, 2004). Plagiarism policies and definitions have been changing and a research driven approach has led to development of holistic policies for deterring and detecting plagiarism within universities (Park, 2004; Macdonald & Carroll, 2006). In addition, text matching software has been developed for 'plagiarism detection', such as Turnitin. These measures are all based on one assumption: that plagiarism in all of its forms is a crime to be deterred, detected and punished, with educational aspects analogous to rehabilitation within the justice system. However, there has also been recognition that cases of plagiarism can be unintentional rather than attempts to deceive assessors (Carroll, 2002; Howard, 1995) and some academics have cautioned against overreliance on text-matching software (Sutherland-Smith & Carr, 2005; Warn, 2006; Youmans, 2011). These concerns have led to a call for educational interventions with positive developmental aims rather than goals limited to offence reduction (McGowan, 2005).

One pedagogic intervention to the plagiarism problem focuses on improving authorial identity in students (Elander, Pittam, Lusher, Fox & Payne, 2010), rather than deterring plagiarism. Authorial identity is a construct defined by Pittam, Elander, Lusher, Fox and Payne (2009, pp. 154) as 'the sense a writer has of themselves as an author and the textual identity they create in their writing'. It is the authorial identity construct and the associated educational approach to plagiarism that this thesis is concerned with.

The current thesis presents three studies that expand knowledge of authorial identity and the way it can be applied within a higher education context. The first is an interview study conducted with professional academics at UK universities. So far, work on authorial identity has focused on the student perspective of authorship (Elander et al., 2010; Kinder & Elander,

[1] Karl Theodor zu Guttenberg stepped down from his post as German defence minister after it was found that portions of his PhD thesis were lifted verbatim from unacknowledged sources.
[2] London School of Economics (LSE) investigated Saif al-Islam Gaddafi's PhD thesis following widespread allegations of plagiarism.

2012; Pittam et al., 2009), but academics represent significant stakeholders in higher education. Acting as assessors, tutors, example authors, and in this context sometimes accusers, their understandings of authorial identity are an important addition to the framework.

The second study developed a psychometric scale for measuring authorial identity in students; initial items for the Student Attitudes and Beliefs about Authorship Scale (SABAS) were generated using findings from the first study, focus groups with students, and suitable items selected from the literature. A large student sample (n=439) was used for reliability analysis, Exploratory Factor Analysis (EFA) and Parallel Analysis (PA) to develop the scale. The rigorous item reduction procedure evaluated content validity, internal reliability and dimensionality to produce a 17 item scale with 3 factors. This was necessary due to the unstable factor structure identified in Pittam et al.'s (2009) Student Authorship Questionnaire (SAQ) and the lack of a robust model of student authorial identity. The final study validated the SABAS by using another student sample (n=306) to test the stability of the factor structure with Confirmatory Factor Analysis (CFA). In addition, the SABAS was tested for convergent validity, test-retest reliability and predictive validity on grade data using subsamples. The resultant 17 item SABAS presented in the current thesis has stable psychometric properties as a measure and the three associated subscales represent a robust multidimensional model of student authorial identity.

Outline of the thesis structure

Chapter one is a detailed literature review that focuses on the context of authorial identity research. Psychological writing research and higher education academic writing are discussed before moving onto the complex issue of plagiarism. The review shows that these issues are discussed in separate discourse communities with very little overlap, even though they are intimately related issues.

Chapter two describes the construct of authorial identity by reviewing current authorial identity research. This review is presented with a discussion of the associated pedagogical approach and exploration of how the construct can be further developed by on-going work.

Chapter three describes the methodological issues related to the research project presented in the current thesis, starting with the critical realist perspective that forms the basis of the

mixed methods approach adopted. The main body of this chapter is split into two sections covering qualitative and quantitative methods separately. The data collection methods are discussed alongside the analytical techniques used to interpret data. In the qualitative section this focuses on the use of semi-structured interviews and thematic analysis. The discussion of quantitative methods deals with psychometric scale development and a number of statistical methods that are used in this process. Ethical considerations are also included in this chapter.

Chapter four presents study one; interviews with professional academics about authorial identity. This research involved development of an interview schedule that was used to collect rich qualitative data from participants. A total of 27 lecturers from six UK institutions were interviewed; the sample was made up of academics from a variety of disciplines, and with a variety of experience levels. Analysis identified recurring patterns and themes relating to ways that academics understood authorial identity.

Chapter five describes study two; the development of a psychometric scale for measuring authorial identity. This scale development procedure included an item generation and content validity phase before the items were administered to a large sample of students. Items were dropped from the pool following analysis of the student responses. The resulting Student Attitudes and Beliefs about Authorship Scale (SABAS) is presented alongside some of the psychometric properties identified in the analysis.

Chapter six details study three; validation of the SABAS scale by administering it to another large student sample. A number of analytical techniques were used to examine the convergent validity, test-retest reliability, predictive validity and factor structure stability of the SABAS. Results from this study show that the SABAS has potential as a useful measure of authorial identity with applications in higher education. In addition, the study proposes a model for understanding student plagiarism that has been identified in two separate samples.

Chapter seven is a discussion of the findings from all three studies. These are explored in relation to their impact on theory and application. A revised model of authorial identity is presented here alongside pedagogical recommendations for lecturers. Strengths and limitations of the research are also considered with suggestions for further research on authorial identity.

Personal Statement

The research presented here was conducted over a period of four years and I was the primary investigator for all of the studies reported. The thesis that follows is based on my dedicated work and experiences over this period, so my personal involvement with the project should be outlined before continuing. In 2008 I read about some of Professor James Elander's on-going work on authorial identity and undergraduate plagiarism; I had just completed my undergraduate studies at the time and was fortunate enough to have presented a poster at my first academic conference in Venice. I found the work on plagiarism fascinating, because reflection on my own experience as an undergraduate did not reflect the findings of research in the area. I felt attached to the undergraduate research I had conducted, submitted and presented. In addition, I identified strongly as the author of this work. By chance, I had an opportunity to speak with Professor Elander soon afterwards and asked some questions about the research he had conducted with colleagues across the UK.

A year later I was contacted by my undergraduate dissertation supervisor, Dr Maggie Gale, informing me of a PhD studentship looking at authorial identity. I successfully applied for the opportunity and began the research at the University of Derby (UoD) in late 2009. Alongside the research, I taught undergraduate psychology and had the opportunity to discuss my topic area with a number of academics from different disciplines. It is the inclusive culture at UoD that made my research possible; although some academics were sceptical about authorial identity, they were all open to debating the idea and their concerns about plagiarism. These conversations made me realise that academics' understandings of authorial identity and plagiarism were integral to building a model of the construct; this formed the basis for interviews with academics that were conducted in study one.

From these discussions and my own experiences marking student assignments, it was clear that there were differences between staff and student attitudes towards academic writing. I found that I shared more in common with the values of professional academics than with the general attitude of students. With reflection, it occurred to me that this attitude was present during my time as an undergraduate; more importantly, I became aware that this had not been the predominant attitude amongst my peers.

Aware that my own anecdotal reflection was an unreliable source of information, I returned to examining the student perspective and the work that had already been conducted (e.g.,

Pittam et al., 2009; Elander et al., 2010). One key finding from study one was that academics mentioned many different features of authorial identity that were not included in Pittam et al.'s (2009) model of authorial identity. The findings from study one suggested that the Student Authorship Questionnaire (SAQ) developed by Pittam et al. (2009) needed revision. After examination of the SAQ's development process and reported psychometric properties, I decided that a completely new scale was needed; one focused on the psychological construct of authorial identity and based on a large, varied item pool. The development of this scale with a large student sample and statistical analysis became study two. Validation of the scale was conducted with a separate sample and additional analytical techniques in study three.

This research was conducted as a piece of psychological research with the aim of applying the research to pedagogical contexts in higher education. It is important to note that I identify strongly as a psychologist due to my training and affiliations. Whilst I consider the scientific principles of psychology to be important, I recognise that this is an area of multidisciplinary interest and other researchers may approach the same questions very differently. However, I strongly believe that the robust psychological approach to the research in this thesis can support pedagogy. Conducting the research has certainly given me insight into many aspects of writing and this now informs my own teaching practices. As a lecturer in social psychology at Birmingham City University, I have been able to implement some authorial identity informed innovations in my own course design.

Chapter 1: Literature Review of Academic Writing and Plagiarism

1.1Overview

The current chapter outlines the context for research on authorial identity with a review of the literature. Literature searches targeted materials relevant to plagiarism, authorial identity, academic writing, higher education pedagogy, and psychological contributions to these topics. Literature for this review was collated using searches in the following indexed databases: Educational Resources Information Center (ERIC), Psychinfo, Google Scholar and Web of Knowledge. Publications from this search were examined and the review was expanded to include literature cited by materials in the initial pool. Three strands of literature were identified as meaningful in the context of the current thesis; psychological research on writing, sociolinguistic approaches to writing in higher education, and the growing body of literature on plagiarism. These discourses include a large number of publications and a comprehensive discussion of all the topics is beyond the scope of the current thesis. As a result, the current review focuses on areas relevant to the authorial identity approach presented in this thesis.

The higher education context in the United Kingdom

Russell, Lea, Parker, Street and Donahue (2009) observe that higher education student writing was an area attracting little interest in the United Kingdom (UK) before the 1990s. Although Leavis (1979) commented on the state of academic writing, UK higher education institutions did not adopt a widespread approach to writing comparable to Writing Across the Curriculum (WAC) developments in the United States (US). According to Russell et al., the introduction of widening access initiatives prompted focus on the topic of writing pedagogy. These policies saw mass expansion of higher education under the labour government with ambitious targets for 50% of young people to enter higher education (Hill, 2006). Although these targets were never reached, the era was characterised by growth in student numbers and efforts to widen participation in higher education (Blanden & Machin, 2004). According to Ivanic and Lea (2006), 32% of the population under the age of 30 had entered higher education by 1995. It should be noted that these contextual details are relevant in contemporary UK higher education, suggesting that there is a need to continue developing writing instruction in our universities.

Widening access is still considered a priority; policy continues to focus on widening participation (Harris, 2010), and initiatives to increase the participation of ‘non-traditional’ students in higher education continue to be developed and evaluated (Hoare & Johnston,

2011; Reay, Crozier & Clayton, 2010). However, the higher education sector in the UK is currently going through upheaval with the increase of student fees resulting from the Browne report (Browne, Barber, Coyle, Eastwood, King, Naik & Sands, 2010), which may have a considerable impact on widening access initiatives. There is evidence that widening access initiatives have not been entirely successful at changing the socioeconomic background of students in certain populations and professions. One example is that of medicine, in which it has been suggested that widening participation initiatives have been successful but there are too few to make a real impact on the sector (Mathers, Sitch, Marsh & Parry, 2011). The Browne report also admits that there has not been enough progress in widening participation in the most selective institutions, and recommends further steps to change this (Browne et al., 2010). Widening access is a priority of the Browne report, but many were concerned that the fee increase would reduce the proportion of undergraduate students from lower socioeconomic backgrounds (Deakin, 2011). Furthermore, Richardson (2008) identified statistically significant differences in the attainment of ethnic minority groups when compared with White students. Taking a critical approach to these findings, Richardson suggests that the success of widening access initiatives should not be judged by acceptance rates, but by parity in educational outcomes between traditional and non-traditional student populations. With these factors in mind, it is important to continually review and develop pedagogies that will support non-traditional students that do attend university, in order to retain them and facilitate course completion.

Academic writing at higher education level needs to be recognised as a task that can be difficult for undergraduate students to understand. For those who followed the 'traditional route' through A levels, the written assignments set for first year undergraduates can appear to be longer versions of those used in further education. This can lead to students being under-prepared for the writing required in undergraduate studies, and writing at undergraduate level has been shown to require development of complex skills to meet the demands of assessment criteria (Elander, Harrington, Norton, Robinson & Reddy, 2006). Jessen and Elander (2009) reported that further education students are overconfident of their ability to understand higher education assessment criteria. They pointed out that higher education students are expected to provide more support for their analyses and display signs of critical thinking at undergraduate level. For 'non-traditional route' students entering university with vocational qualifications, the gulf between the written assignments they are required to complete and written tasks they have done in the past may be even wider. As the

student population becomes less homogenous, pedagogy needs to adapt to account for this. The authorial identity approach is an example of pedagogy development that is taking place in the context of UK higher education. The following sections present a review of research aimed at improving understanding of writing, and academic writing in particular.

1.2 Psychological Research on Writing

Writing falls on the axis of the three major psychological approaches; it is of interest to behaviourist researchers as a complex, uniquely human behaviour, and to social psychology because of its communicative role. However, it is cognitive psychology that has been most fascinated by writing, perhaps because of inevitable comparisons to the act of thinking itself. Writing is conceptualised by psychologists as a complex task involving the regulation of multiple processes and skills (Kellogg, 1994). The work of psychologists provided frameworks for understanding the process of writing (Flower & Hayes, 1980; Hayes, 1996); identified the importance of goals in writing performance (Kellogg, 1988; 1990); explored the importance of motivational factors (Pajares, 2007); and examined the importance of surface and deep approaches to learning (Lavelle & Zuercher, 2001). Furthermore, psychological research has advanced methods for exploring writing, such as thinking aloud protocols (Flower & Hayes, 1980), dual task paradigms (Galbraith, Ford, Walker & Ford, 2005), semi-structured interviews (Lavelle & Zuercher, 2001), psychometrics (Pajares & Valiante, 1999), and textual analysis of essays (Norton, 1990). Psychological theories of writing have helped explain a complex developmental process and they should be considered when designing undergraduate curricula (Camp, 2012).

Flower and Hayes (1980) developed a cognitive model of writing that included three processes interacting with long term memory and the task environment (Figure 1). They categorized the three processes as planning, translating and reviewing; this early model has been influential in writing research, because it presents the three processes as nonlinear. Previous stage models of writing were product focused; the stages were conceptualised in relation to the chronological order and physical act of writing. For example, Rohman (1965, pp. 106) states that "In terms of cause and effect, thinking precedes writing." This modelled writing as a linear act that merely translated thought into prose, whereas the cognitive process theory presented by Flower and Hayes (1980) suggested that transitions between processes were fluid and open to back and forth movement. Basing their work on writer protocols recorded from participants vocalising their thoughts as they wrote, this reflected a paradigm

shift in the direction of psychological writing research. Using this model as a basis for cognitive research into writing, many researchers have furthered understanding of these processes.

Figure 1. Flower & Hayes' (1980) cognitive process model of writing

Content removed for copyright reasons. The relevant figure is available in the following publication:

Flower, L., & Hayes, J. (1980). The Dynamics of Composing: Making Plans and Juggling Constraints. In L. Gregg & E. Steinberg, (Eds.), *Cognitive Processes in Writing: An Interdisciplinary Approach* (pp.31-50). London: Lawrence Erlbaum Associates.

Work conducted by Flower, Hayes, Carey, Schriver and Stratman (1986) identified strategies that were present for expert writers but absent for novice writers, leading to a focus on the differences in cognitive processing between novice and expert writers. Cognitive psychologists have found significant differences in the strategies used by expert writers and novice writers (Bereiter & Scardmalia, 1987). In addition, there is evidence that expert writers experience fewer problems related to working memory overload, suggesting that even children develop automated functions for some processes when writing (Olive, Favart, Beauvais & Beauvais, 2009).

Cognitive process theories of writing aim to explain the strategies and thinking used for composition (Becker, 2006). For example, one body of research has focused on the impact of

planning strategies on the quality of writing output. Kellogg (1988) found that outlining during the planning process was associated with better quality writing, but producing a rough draft was not. Further research suggests that the success of specific strategies is related to the types of working memory used by different processes (Kellogg, 1996). Using Baddeley's (1986) model of working memory, Kellogg (1996) presented a model proposing that the central executive was integral to all of Hayes and Flower's (1980) writing processes, but the phonological loop and visuo-spatial sketchpad subsystems were only used during specific processes of writing. The phonological loop is theorised to be important for the translation of abstract meanings into text and the visuo-spatial sketchpad for the planning and positioning of content in relation to the whole of the text. More recently, experimental research by Galbraith et al. (2005) examined the effect of working memory interference tasks on the planning process. Their findings supported Kellogg's model in relation to planning being associated with use of the visuo-spatial sketchpad component of working memory. Furthermore, Galbraith et al. showed that interference with the visuo-spatial sketchpad was associated with fewer ideas being generated. This finding has been further supported by experimental work conceptualising the generation of ideas as an indicator of knowledge-transformation as opposed to knowledge-telling when writing (Galbraith, Hallam, Olive & Le Bigot, 2009).

The distinction between knowledge-telling and knowledge-transforming strategies of writing was originally made by Bereiter and Scardmalia (1987) in relation to the revision process. They suggested that knowledge-transformation was used by more experienced writers to achieve their rhetorical goals, whereas novice writers adopting a knowledge-telling strategy are less likely to form new ideas and understanding when reviewing their own text. This observation is particularly important in the context of higher education writing, because Norton (1990) identified a mismatch between students and tutors regarding their criteria for good quality essay writing; students were concerned with the inclusion of content, whereas academic staff prioritised the use of argument. These can be conceptualised as mapping onto the two strategies outlined by Bereiter and Scardmalia. Flower et al. (1986) also proposed that one of the main differences between expert and novice writers was in the available strategies for revision. Their model of revision suggested that expert writers are better able to revise their texts because they are more adept at separating their intended meaning and the text's actual meaning. Bartlett (1981) reported research findings that children were able to detect a large proportion of errors in text, but this dropped dramatically when the text was

composed by the reader. Flower et al. (1986) suggest that when a writer revises their own text, they are aware of the writer's intentions; the absence of intentional knowledge when reading someone else's writing allows a reader to interpret the text as it is written.

In relation to higher education academic writing, the evidence from cognitive psychology is not quite clear. Torrance, Thomas and Robinson (1999) found that a number of writing strategies were present in a sample of undergraduate students, and noted that these different strategies were not associated with any differences in grades. Flower, Stein, Ackerman, Kantz, McCormick and Peck (1990) used interviews and thinking out loud protocols to distinguish between undergraduate students using knowledge-telling strategies and knowledge-transforming strategies. However these differences were not related to the success of the students regarding an assigned writing task. Another study conducted by Torrance, Thomas and Robinson (1993) compared three writing interventions based on different approaches. In a sample of graduate students, they found that the intervention based on cognitive strategies performed the worst, and did not significantly improve the writing productivity of participants. The other two strategies, a product-centred course and a generative writing course with peer feedback did; this suggests that other factors are influential on writing output. In particular, the finding that peer feedback was related to better writing suggests that there are aspects of writing that are socially mediated.

In another larger longitudinal study, Torrance, Thomas and Robinson (2000) looked at undergraduate students' writing across three years; using cluster analysis on student responses to self-report measures, they identified four writing styles that were significantly associated with writing performance. 'Minimal-drafting' and 'outline-and develop' strategies produced the poorest results, whereas 'detailed-planning' and 'think-then-do' strategies resulted in better essays. Moreover, the analysis showed that these styles were stable across the three years in two thirds of the participants. This suggests that the writing instruction targeting their sample had little effect on student writing styles, and that careful consideration should be undertaken regarding pedagogy. These mixed research findings show that writing at university level is not explained by cognitive strategies alone and highlight the complexity of relationships between writing strategies, educational approaches, and writing performance. Even in controlled quasi-experimental settings, differences in writing behaviours are difficult to predict. Fallahi (2012) suggests that there are anecdotal accounts of how writing at higher

education levels can be improved, but there is relatively little empirical research on the topic. This highlights the need for psychological research to focus on writing at this level.

The frameworks reviewed so far have furthered understandings of the theory behind writing processes (Hayes, 2006), but the application of this research to writing pedagogy has been limited. Kellogg and Whiteford (2009) have presented a case for deliberate practice as an effective method of training advanced writing skills, but this suggestion is hardly a pedagogical revolution. In addition, writing instructors from composition studies have questioned the utility of focusing on cognitive processes, and argued that they encourage adoption of skills-based approaches that overlook the importance of social context (Lea & Street, 1998; Clark & Ivanic, 1997). These critiques led to development of the academic literacies approach to writing pedagogy (Lea & Street, 2006) that is discussed in the following section. Psychological researchers have also recognised the limitation of process models; for example, Galbraith and Rijlaarsdam (1999) have argued that writing instruction should make use of psychological theories and social research as complementary approaches rather than competitive ones. Galbraith (2009) also suggested that English for Speakers of Other Languages (ESOL) writing instruction should account for genre and conflicts relating to a writer's sense of self. These echo the warnings of authors from the academic literacies movement (Ivanic, 1998; Russell et al., 2009), suggesting that the gulf between psychological and sociolinguistic approaches to writing is not as wide as it first appears.

Hayes (1996) revised the cognitive process model of writing by retitling the processes outlined in the Flower and Hayes (1980) framework. This revised model also added working memory and socio-environmental factors, suggesting that cognitive psychologists have been aware that socio-cultural factors play a significant role in writing behaviour (see Figure 2). Kellogg (1994) also commented on the influential role of social factors on writing, but this area remained largely ignored until the development of academic literacies. Lea and Street (2006) have suggested that skills-based deficit models of writing instruction have drawn heavily from cognitive psychology and process theories of writing; academic literacies' direct opposition to skills-based approaches have meant that the movement tends to overlook psychological research.

Figure 2. Hayes' (1996) revised cognitive process model

Content removed for copyright reasons. The relevant figure is available in the following publication:

Hayes, J. R. (1996). A new framework for understanding cognition and affect in writing. In M. Levy & S. Ransdell (Eds.), *The Science of writing: Theories, methods, individual*

Aside from process models, psychologists have also examined motivational factors related to writing. Meier, McCarthy and Schmeck (1984) conducted research on writing by applying Bandura's (1977) self-efficacy construct. Using a sample of college undergraduates, they found that self-efficacy measures were predictors of writing quality as judged by four experienced raters. Further work conducted by McCarthy, Meir and Rinderer (1985) examined the written output of 137 undergraduate students in relation to measures of four psychological constructs: self-efficacy, locus of control, anxiety and level of cognitive

processing. Self-efficacy was shown to be the only reliable and significant predictor of writing quality.

Psychological research has also focused on the deep and surface approaches to learning theorised by Marton and Saljo (1984). Lavelle and Zuercher (2001) conducted a mixed methods study to examine the writing approaches of 30 university students. Using interviews and self-report measures they provided evidence for a model of higher education writing styles with five salient approaches; they conceptualised these approaches as elaborative, reflective-revision, low self-efficacy, spontaneous-impulsive and procedural. Elaborative and reflective-revision were categorised as deep strategies with the remainder falling into the surface category. Self-efficacy in writing has also been explored by developmental psychologists focusing on the construct's effect at primary and secondary education levels (Pajares, 2003). However, some findings have relevance at advanced levels of writing such as undergraduate academic writing. Pajares and Johnson (1996) identified that ethnic minorities can have lower writing self-efficacy when compared to other schoolchildren. They suggest that low self-efficacy can influence decisions throughout an academic career, and further propose that this accounts for increased high school dropout rates reported amongst ethnic minorities.

Research looking at self-efficacy and writing has also advanced the use of psychological methods for examining writing. Pajares and Valiante (1999) developed a scale for measuring writing self-efficacy in schoolchildren and Pajares (2003) used exploratory factor analysis (EFA) to evaluate the scale. In the higher education writing context, Harbke (2007) developed a scale to measure self-efficacy in scientific writing for academics and students in science based disciplines. Lavelle (1993) also used psychometric methods to develop and validate a scale examining the writing styles of undergraduate students. This Inventory of Processes in College Composition (IPCC) used EFA to develop the writing styles model (Lavelle & Zuercher, 2001). More recently, Lavelle, Ball and Maliszewski (2011) administered the IPCC to nursing students and found their responses to be consistent with the factor structure found in the general student population. These studies have been highly influential on the use and development of reliable self-report measures in the context of student writing.

Some psychologists have successfully used psychological methods in the context of applied pedagogic research. For example, psychologists were influential in developing the Write Now Centre of Excellence for Learning and Teaching (CETL): a multi-institution longitudinal project in the UK, which introduced peer-mentors to support academic writing (Write Now, 2010). In particular, psychological research from the CETL has looked at the integration of students into undergraduate study (Reddy, Greasley, Parson, Talcott, Harrington & Elander, 2008); student experiences of peer writing tutors (Bakhshi, Harrington & O'Neill, 2009); and the complex skills required for academic writing (Elander et al., 2006). These pieces of contemporary research are examples of pedagogic psychology contributions to improving student writing.

Reddy et al. (2008) describe an intervention designed to improve writing in psychology undergraduates during their transition into higher education. Adopting a critical stance to their evaluation, they present initial attempts to implement a bolt-on extracurricular intervention as having limited success. However, further iterations of the intervention were embedded into the curriculum and included opportunities for students to develop relationships with peers and staff. Evaluation of these later iterations indicated that they were more effective at improving student writing performance than the skills-based intervention that was initially implemented. These findings suggest that psychological research methods can make a positive contribution to the evaluation of writing interventions, and the application of these methods can facilitate change quickly and effectively.

In addition, the identification of social relationships with peers and staff as important highlights the need to examine social aspects of higher education writing pedagogy. Other research has also found that discussion of writing in social settings can have a positive impact on student writing. Bakhshi et al. (2009) reported a questionnaire study of students accessing a peer-mentor writing centre at a post-1992 university. They found that the foremost motivation that students had for accessing the writing centre was to talk about their writing with someone. In addition, they report that students favoured speaking to a peer-mentor from their own subject discipline, suggesting that pedagogy needs to take disciplinary differences into account. These findings suggest that writing at higher education level is a subject specific and complex task.

The complexity of undergraduate writing suggests that it requires interaction of multiple domains and skills. Elander et al. (2006) examined the skills required to meet undergraduate assessment criteria, and found that it was impossible to completely separate writing skills from subject knowledge and learning. As a result they suggest that attempts to improve generic skills do not facilitate the meeting of assessment criteria by students; instead they advocate a re-conceptualisation of assessment criteria as learning criteria, as suggested by Norton (2004). This approach proposes that academics balance levels of feedback with dissuasion from focusing on the mechanistic features of assessment. This is particularly important given the tendency of students to associate academic writing only with assessment (Itua, Coffey, Merryweather, Norton & Foxcroft, 2012). Fortunately, there is evidence that new lecturers understand the need to facilitate deep learning in their students (Norton, Aiyebago, Harrington, Elander & Reddy, 2010), suggesting that instructors are aware of these issues related to writing and assessment.

Psychological research has also examined the methods used in the assessment process, specifically focusing on the impact of essay feedback (Norton & Norton, 2001; Defeyter & McPartlin, 2007; Wakefield, Adie, Pitt & Owens, 2014). Norton and Norton developed an essay feedback checklist that was administered to students completing an academic essay for a first-year psychology module and the respective tutors marking these pieces of work. The checklist included eight areas of feedback criteria that are commonly used when assessing psychology student essays. Student respondents were invited to mark each criteria with 'yes', 'partially' or 'no', indicating self-perceptions of whether they had adequately addressed each of the eight areas. Marking tutors also responded using the same domains and response options for each piece of work, before assigning the essay grade. Analysis of these responses showed statistically significant differences between tutor assessments and student judgements on six of the eight criteria, with one of the largest discrepancies relating to whether student essays 'evaluated theoretical concepts and research evidence' (Norton & Norton, pp. 5). This finding suggests that students do not critically engage with sources; Norton and Norton attribute this to a lack of student confidence, particularly when they are required to challenge or question published arguments. Development of a concrete authorial identity could be an effective intervention for reducing these problems and confidence in writing has been identified as a main factor in authorial identity (Elander et al., 2010).

Defeyter and McPartlin (2007) adapted the essay feedback checklist by adding an element to Norton and Norton's (2001) procedure. In addition to the use of an essay feedback checklist for assessment, Defeyter and McPartlin incorporated a student exercise to develop their own feedback checklist for a developmental psychology module. They reported that students expressed improved confidence and demonstrated self-regulated learning following completion of this task. These promising findings suggest that innovative feedback practices can be embedded into teaching to facilitate student learning. The exercise presented by Defeyter and McPartlin presents important implications for attempts to improve authorial identity, that have exclusively taken the form of add-on interventions so far (e.g., Elander et al., 2010; Maguire, Reynolds and Delahunt, 2013).

Wakefield et al. (2014) further developed use of Norton and Norton's (2001) essay feedback checklist as an applied tool, and evaluated its effectiveness using a cohort of 104 students that was randomly allocated into two groups. The control group participants were given conventional feedback presented in 'block text', whereas students in the essay feedback checklist group were required to complete an essay feedback checklist before submission. The tutor gave feedback for this group by completing the essay feedback checklist and providing written feedback to address the largest discrepancies between the student and tutor judgements. Wakefield et al. found that there were no significant differences in essay performance between the two groups, but there were significant differences in marks for a following exam. In fact, students from the essay feedback checklist group had a significant increase in marks compared with a significant decrease in marks for the conventional feedback group. These findings suggest that innovative feedback methods have a role in developing students as academic writers. In addition, qualitative investigations have indicated that student evaluations of the essay feedback checklist are largely positive, although Norton, Clifford, Hopkins, Toner and Norton (2002) give a caveat for these findings by cautioning that the checklist method is not sufficient to bridge the gap between student understandings and tutor expectations alone. Although work using the essay feedback checklist has been able to reduce discrepancies between student and tutor judgements of academic writing, differences are still reported by researchers (e.g., Norton et al. 2012). The remaining differences are likely explained by a range of social, contextual and psychological factors, that include issues relating to identity.

The reductionist traditions valued within psychology have been criticised by researchers from other disciplines (Lea & Street, 1998; Lea & Street, 2006), but the substantial contribution of psychology to the advancement of knowledge about writing cannot be ignored. For example, these reductionist principles have allowed psychologists to identify contextual factors and conclude that they have a causal impact on assessment. Experimental psychological research conducted by Hartley, Trueman, Betts and Brodie (2006) identified that some typographical variables can have significant effects on the marks that assessors award for student writing. These findings suggest that student writing performance is judged by tutors, consciously or unconsciously, using subtle markers not included within mark schemes. Moreover, psychological researchers have recognised that models of writing need to take socio-cultural influences into account. James Hartley (2002), an influential psychologist in writing research, has explicitly called for reform of traditional study skills teaching to include more focus on social and contextual aspects of study. In fact, authorial identity studies are examples of pedagogic psychology research that is situated in a framework that emphasises context (e.g., Pittam et al., 2009; Elander et al., 2010; Kinder & Elander, 2012). However, there are still disagreements about the influence of different approaches; for example, Kellogg and Whiteford (2012) suggest that the field of composition has shifted focus towards social influences, leading to omission of practice from writing instruction, and a tendency of tutors to ignore process-based contributions to writing pedagogy.

Sociological research has highlighted the importance of identity and related social concepts in academic writing (Clark & Ivanic, 1997; Ivanic, 1998), but the psychological aspects underlying these relationships have been overlooked. For use of authorial identity to be effective, the way that it is understood psychologically needs to be investigated. Pittam et al.'s (2009, pp. 154) definition of authorial identity as the "sense a writer has of themselves as an author and the textual identity they construct" suggests that the construct has a psychological basis stemming from the writer's attitudes and beliefs about writing, their concept of authorship and their perception of self. In addition, cognitive models may help to explain how a textual identity is constructed, and whether writers at different levels are consciously aware of this construction. Socially oriented research could also inform the development of cognitive models; for example, social factors may explain the developmental shift from knowledge-telling strategies to knowledge-transforming strategies described by Galbraith et al. (2005). The same may be true regarding deep and surface approaches to writing presented by Lavelle and Zuercher (2001); an approach to writing research that

includes consideration of psycho-social factors should be adopted when examining aspects of writing, particularly one as complex as plagiarism in higher education academic writing.

The current section has reviewed the impact that psychological research has had on writing; in particular, the contribution of process models to contemporary understandings of writing at higher education level. Although cognitive process models have traditionally been linked to skills-based remedial approaches by critics (e.g., Lea & Street, 1998), psychological research has also influenced other areas of pedagogy. Studies in the pedagogic literature have made use of psychological methods and theories for understanding higher education student writing behaviours (e.g., Elander, et al., 2006; Norton, 1990). In addition, they have influenced research on social aspects of writing, such as peer-mentoring (Bakhshi et al., 2009), transition into higher education writing (Reddy et al., 2008), feedback practices (Norton et al., 2002) and the development of communities to facilitate understandings of assessment (Rust, Price & O'Donovan, 2003). These studies suggest that psychological researchers are taking socio-cultural contexts into account when studying higher education academic writing. Increasingly, psychological research on writing incorporates a range of methods, and psychologists such as Hartley and Chesworth (2000) have strongly argued for sequential mixed methods to be adopted when studying student writing. This contradicts the suggestion that psychological research focuses on reductionist strategies and empiricism.

Although there are differences between the academic literacies approach and psychological research, it is interesting to note that both areas have examined the relationship between novice writers and those with more writing experience. Ivanic (1998) has suggested that differences in position, perceived authority and other social factors impact on the way that novice writers attempt to establish themselves in a discourse. Differences in quality, efficiency and writing style of novice and expert writers is likely better explained by a combination of these research traditions, rather than by one approach alone. The following section presents the contribution of socio-linguistic perspectives on writing; in particular, the influence of the academic literacies approach (Lea & Street, 2006) on higher education writing pedagogy is discussed in relation to authorial identity.

1.3 Sociolinguistic approaches to academic writing

The movement that has been most influential for developing writing pedagogy and accounting for these socio-cultural changes in the UK is the academic literacies approach (Wingate & Tribble, 2011). This approach to academic writing has been heavily influenced by the development of genre-based pedagogies in the US and in English for Speakers of Other Languages (ESOL) contexts (Russell et al., 2009).

The current section presents a review of three influential approaches to higher education writing instruction that have their roots in sociolinguistic disciplines: the Writing Across the Curriculum (WAC) movement, the English for Speakers of Other Languages (ESOL) literature and the academic literacies approach. These three pedagogic perspectives have been developed from different international contexts, but they have been influential on the research and applications of one another (Russell et al., 2009). These approaches have been developed from the subject traditions of literary studies and linguistics, and can be contrasted with the psychological process-based approaches discussed under the heading of psychological research on writing. In particular, the academic literacies approach was developed as a reaction to process-based models of writing and the skills-based pedagogies associated with them (Lea & Street, 1998). Although the approach to authorial identity adopted in the current thesis can be characterised as psychological, it also draws on many features of academic literacies, particularly that of the writer identity model developed by Clark and Ivanic (1997). As such, it is important to situate the authorial identity approach by reviewing the literature from these areas.

Overview of the approaches

Although academic writing has at times been described as an invisible activity (Elbow, 1995), improving higher education writing instruction has been the focus of efforts from a number of discourse based approaches. In the United States (US), the Writing Across the Curriculum/Writing in the Disciplines (WAC/WID) movements have been influential in setting up writing centres to support undergraduate writing. Freshman composition courses became the norm in US universities in the 1970s (North, 1984), and this led to the creation of writing centres across most US institutions. A great deal of attention on the topic of academic writing has also come from tutors working in an English for Speakers of Other Languages (ESOL) context (Berman & Cheng, 2010; Hyland, 2004; 2007; Mohan & Lo, 1985). This could be due to the understandable prevalence of English for Academic Purposes (EAP)

departments in institutions based in non-English speaking countries. The WAC and ESOL approaches have informed a movement to develop academic writing pedagogy in the United Kingdom (UK) known as the academic literacies approach (Lea & Street, 2006; Russell et al., 2009). This approach has become a basis for academic writing research and has also informed pedagogical initiatives aimed at improving academic writing (Wingate, Andon & Cogo, 2011; Stacey, 2009; Wingate & Dreiss, 2009). Although the WAC, ESOL and academic literacies approaches differ in some respects, they also share some common themes. Firstly, they are all developed from the perspective of academic writing tutors. Secondly, they can be broadly classed as discourse-based approaches; the US approach is rooted in the subject of rhetoric and composition (Thaiss & Porter, 2010; Jamieson, 1996; Mcleod & Soven, 1992), the ESOL approach tends to utilise the field of applied linguistics (e.g., Tang & John, 1999; Hyland, 2001a; 2002; 2005), and the academic literacies movement has its roots in socio-linguistic anthropology (Lillis & Scott, 2007; Street, 1984). Although the subject areas have different emphases, they have their roots in the tradition of examining literary discourse.

Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID)

A significant amount of literature about setting up WAC/WID writing centres has been published during the spread of WAC/WID to institutions all over the US (Thaiss & Porter, 2010; Jamieson, 1996; Mcleod & Soven, 1992). The approach has been the focus for critique and discussion about writing instruction in higher education (Ochsner & Fowler, 2004; Walvoord, 1996), and this has led to the majority of US universities having writing centres devoted to supporting academic writing (Russell et al., 2009). Although the practice of including writing centres at institutions has been firmly established (North, 1995), the movement continues to press for more focus on these areas as a priority. Scholars from the WAC/WID tradition have been wary of complacency regarding academic writing, and suggest that graduates are still leaving US higher education without adequate written communication skills (Dana, Hancock & Phillips, 2011).

Other commentators have addressed concerns about the lack of an identifiable and coherent structure across institutions. Condon and Rutz (2012) observe that thirty years of WAC pedagogy and development has led to differing types of writing centre structures across the US. In an attempt to clarify this situation, they presented a taxonomy of four writing centre types that represent different stages of development. The first of these, the foundational

writing centre, is largely run by volunteer tutors who are dependent on the goodwill of institutional managers to provide low levels of financial support. The second type described is the established writing centre, which has its own space and budget, and scholarly value that is recognised by the institution. The next stage of development is described as the integrated writing centre, which is characterised as having a substantial presence with permanent funding from the parent institution. In addition, upper administration seeks consultation and advice from the writing centre on assessment practices and policy. The final type of writing centre outlined by Condon and Rutz is the institutional change agent; this type of writing centre not only influences academic writing practices, but reaches beyond the domain of academic writing to serve as the driver for development of institutional policy. The institutional change agent is also characterised as having a signature pedagogy with considerable scholarly output related to the theory behind the program. By outlining this taxonomy, Condon and Rutz highlight two major issues; firstly, despite thirty years of national development and recognition, many writing centres are still developing their capabilities to support academic writing. Secondly, not all WAC writing centres are the same, with some suffering from limitations in funding and support from their institutions. This suggests that calls for WAC pedagogy to be reinforced by pedagogic research (e.g., Jones & Comprone, 1993) are still relevant in the contemporary higher education landscape. However, there is promising evidence that these concerns are being addressed by researchers, particularly in the development of WAC pedagogies such as writing to learn.

Writing to learn (WTL) pedagogies were developed in WAC writing centres to integrate writing with the process of learning subject content. Bernstein and Johnson (2004) advocated this approach because it allows higher order thinking skills to be used, resulting in deep learning of the content. Bangert-Drowns, Hurley and Wilkinson (2004) reported a meta-analysis of WTL writing pedagogy in comparison to traditional teaching of subject matter with promising findings. They found that 75% of comparisons supported the use of WTL methods over traditional methods, and WTL methods were particularly effective when they incorporated reflection on the learning process. These findings are particularly interesting in the context of authorial identity, as Pittam et al. (2009) suggest that deep learning is a fundamental aim of adopting an authorial identity approach. However these assertions regarding WTL have not gone uncontested; Ochsner and Fowler (2004) suggest that thirty years of research has not provided a sufficient evidence base that WAC approaches are more successful than other learning techniques. As further criticism, Pollard and Easter (2006)

have argued that WAC writing centres tend to be evaluated on the basis of faculty satisfaction rather than objective measures of student performance, calling some positive evaluations into question. These common criticisms highlight the need to develop suitable outcome measures when exploring novel writing pedagogies. For the authorial identity approach, evaluation of interventions has been subject to similar limitations (e.g., Elander et al., 2010) and attempts to establish the effectiveness of authorial identity initiatives have been hampered by the lack of a stable measure (Ballantine, Guo & Larres, 2013).

Despite the limitations of writing centre evaluations, writing centres have also facilitated research on writing and identity; Chiang and Schmida (2002) conducted interviews with Chinese students born in the US and found that many of their participants had problems identifying themselves as American or Chinese, due to their position as bilingual writers. They had the language competency of native English speakers, but some of them experienced difficulties with writing that are reported in the ESOL literature. Chiang and Schmida suggest that language identity is an important consideration for writing instructors, not just language competency. Other researchers with a WAC background have looked specifically at plagiarism. Most notable among these is Rebecca Moore Howard (1992), who has been arguing for writing centres to develop student identities and understand pedagogic aspects of patchwriting, which is a form of unintentional plagiarism. Recently, Howard, Serviss and Rodrigue (2010) conducted research examining 18 student research texts. This pilot study identified that student writers used source texts inappropriately by paraphrasing individual sentences. Howard et al. suggest that WAC pedagogy needs to address this issue by teaching students to summarise entire articles instead of narrowly focusing on individual sections of texts.

The WAC approach includes a substantial body of literature on academic writing that has been developed over thirty years of practice. A great deal of the research literature is focused on the evaluation and development of writing centres within institutional contexts. Despite the role that these centres play on addressing plagiarism, the contribution to this area of research has been relatively minor. Barring one key contributor, Rebecca Moore Howard (1992; 1999), there is not a substantial amount of research linking WAC writing centres with plagiarism. On the other hand, research from the English for Speakers of Other Languages context has considered this topic at length. An overview of some relevant literature from this field is presented in the following section.

English for Speakers of Other Languages (ESOL)

A great deal of academic writing research has focused on English for Speakers of Other Languages (ESOL) around the world (Berman & Cheng, 2010; Hyland, 2004; 2007; Mohan & Lo, 1985). Mohan and Lo (1985) examined classical Chinese texts to explore a commonly held assumption: that interference from the original language of an ESOL student is responsible for problems they experience with organisational structure when writing in English (Kaplan, 1972). Mohan and Lo also interviewed 10 Hong Kong teachers of English and surveyed 30 Chinese university students from Hong Kong, which was a British colony at the time (all of the students had been studying in English for over 10 years). Comparing this data to a large scale survey conducted in British Columbia, Canada, they concluded that difficulties with undergraduate level writing experienced by the Chinese students were not due to interference from their original language. These problems were instead attributed to a difference in the teaching values of their English language instruction; the teaching of English in Hong Kong emphasised correct sentence structure and accurate grammar, whereas pedagogy in British Columbia was concerned with overall form and structure. This suggests that the values and beliefs of instructors have a substantial impact on the development of their students, highlighting the need to take context into account for writing pedagogy.

Berman and Cheng (2010) carried out a mail-based questionnaire study with students at a university in Canada. Using ad-hoc self-report measures to look at students' perceived language skills difficulties; they found that non-native speakers (NNS) of English perceived themselves to have more difficulties than fellow students who were native speakers (NS) of English. This finding might be expected when considering the background of ESOL students; more interestingly, most of these perceived difficulties were not significantly correlated with grade point averages (GPAs) in their undergraduate students, but relationships *were* significant when looking at graduate students. In addition, NNS students had significantly lower GPAs than the NS students within the graduate sample but not in the undergraduate sample. This suggests that ESOL students are aware of language difficulties throughout their studies, but the detrimental effects of these difficulties become more pronounced at advanced stages of study. These studies show the complexity of writing at advanced university levels and suggest that problems are not merely explained by language competency. In addition, the mixed findings highlight the need to include situated contexts in accounts of higher education writing.

Qualitative research has also been conducted to explore some of the difficulties experienced by ESOL students in more detail. Leki and Carson (1997) interviewed 36 ESOL students about their experiences of academic writing instruction in the US. The interviews were conducted in two phases; the first set focused on students' experiences of writing two specific pieces of work for their writing courses early in the academic year, and the second set of interviews was conducted after they had spent some time specialising in their chosen disciplines. The phase two interviews were concerned with their wider writing experiences at university and how those compared with writing earlier in their composition course. A total of 48 interviews were conducted with 12 of the participants taking part in both phases of the research. Leki and Carson's (1997) analysis suggested that writing in their own discipline and writing for the early English language course were perceived as being completely different due to the types of writing involved. They suggest that the writing conducted in a writing class is different due to differences in source material; writing conducted within a student's subject discipline has more focus on sources originating from the discipline and these sources need to be handled appropriately, whereas writing conducted in the English course is not assessed on the accuracy of content, merely by its form. Leki and Carson emphasise the impact on ESOL students, because disciplinary source texts provided examples of vocabulary and preferred sentence structure for ESOL students; they argue that writing courses are more beneficial for native English speaking students. However, this suggests that native speakers of English do not use source texts in the same way. Considering that disciplines can be conceptualised as academic tribes with their own sets of values and epistemologies (Trowler, 2009), a native speaker of English is likely to experience similar problems adjusting to the discourse of their new 'tribe'. Although the problems may not be as pronounced as those experienced by ESOL students, it is possible to see why a writing class from a humanities tradition might not be relevant to students trying to understand the nuances of writing scientifically. This has led to a growing recognition within the English for Academic Purposes (EAP) community that the genre of writing is an important consideration for teaching writing.

Genre-based writing instruction has been advocated by scholars from applied linguistics; Hyland (2003; 2007) has been particularly influential due to his work on the use of genre-based pedagogies for English language instruction. He suggests that genre-based pedagogies should form the basis of ESOL writing instruction, because process-based methods do not

account for the complex social issues relevant to language (Hyland, 2003). Genre theory and literary analysis are also recommended as useful tools for improving pedagogy because they allow tutors to understand language and writing (Hyland, 2007). In addition to language related problems experienced by ESOL students, further factors in the development of academic writing have been identified in relation to culture. For example, Ramanthan and Atkinson (1999) suggest that the writing encouraged in Western higher education is shaped by our culture; features of our writing that are valued, such as voice, peer review, critical thinking, and textual ownership are associated with the concept of individualism that is dominant in Judaic-Christian ideology. They argue that cross-cultural writing research and socio-cultural knowledge should support ESOL writing pedagogy. This emphasis on the social context of writing has influenced development of the academic literacies approach in the UK.

Academic literacies

Educators in the UK recognised that writing was an important part of development in higher education (Clark & Ivanic, 1997) and were critical of the skills-based instruction methods dominant at the time (Lea & Street, 1998). This led to development of the academic literacies approach by academic writing tutors from English and humanities departments (Ivanic & Lea, 2006). Stemming from the new literacies framework conceptualising multiple discourses situated within wider social contexts, academic literacies has been used to challenge what Lea and Street (2006) describe as the deficit model of writing instruction. This approach emphasises the social and contextual factors related to writing, such as genre (Russell et al., 2009), identity (Ivanic, 1998) and politics (Clark & Ivanic, 1997). Building on research from social linguistics and sociocultural theory, the academic literacies framework emphasises the influences of power and agency in shaping discourse (Lea & Street, 2006).

Academic literacies research and pedagogy is based on the principles of new literacy studies, an approach that challenges the existence of generic and transferable cognitive skills for literacy (Lea, 2004). Proponents of new literacy studies argue that literacy is not a unitary concept; instead, literacies are conceptualised as cultural and social practices that vary according to context (Street, 1984). Drawing from the disciplines of linguistics and social anthropology, new literacy studies and academic literacies research originally focused on critiquing skills-based approaches to writing instruction (Lillis, 2003). The birth of academic literacies was triggered by changes in the UK higher education landscape regarding the

widening participation agenda, and the sudden introduction of ‘non-traditional students’ to writing instructors (Russell et al., 2009). Research from a number of active teacher-researchers followed, mainly focusing on the issues facing examples of the 'non-traditional' student, such as mature students (Lillis, 1997; Ivanic, 1998) and non-native speakers of English (Pardoe, 1994). This early research informed development of an academic literacies framework presented by Lea and Street (1998). They outlined a model of academic literacies that was directly contrasted with two other approaches to writing instruction: skills-based approaches and academic socialisation. The academic literacies approach differs from other initiatives to improve student learning by challenging the conceptualisation of the academy and academic writing as a homogenous entity. Instead, academic literacies conceptualises students as active participants in shaping and making meaning of the academy, primarily by the use of language and engagement with texts (Lea, 2004).

Although academic literacies has roots in socio-linguistics, one of the key ideologies in the approach is an understanding that practice is prioritised over text (Lillis & Scott, 2007). By shifting the emphasis away from texts to practices, the academic literacies movement adopts an anthropological stance to academic writing (Street, 1984). This emphasis on literacies as social practice means that ethnographic methods are the primary sources of academic literacies research. Another way in which academic literacies is distinct from other approaches would be its critical stance to academic conventions. Whilst other approaches aim to support students in their adoption of academic writing conventions to become experts, academic literacies researchers seek to critically evaluate the ways that conventions limit their meaning-making (Lillis & Scott, 2007). As such, academic literacies is characterised by a critical ethnographic stance to academic writing, and a rejection of the idea that there is normative and desirable academic literacy.

Academic literacies is an approach to academic writing that emphasises issues of power and authority (Turner, 2004), identity (Ivanic, 1998) and politics (Clark & Ivanic, 1997). In addition, the approach is critical in emphasis and strongly anti-normative; this rejection of normative academic writing has been problematic for the approach, as it is difficult to conceptualise development when there is no normative standard to aim for. Lillis (2003) pointed out that this was a barrier to developing authorial identity pedagogies for academic writing. However, Lea (2004) suggests that academic literacies approaches can be used to embed student and tutor interactions with text into course design. In particular, Lea suggests

that engaging students in new and familiar literary practices is an important part of allowing students to develop their own version of academic literacy.

Applied developments have also manifested as successful pedagogical changes made to writing instruction by dedicated teachers, such as Roz Ivanic and Romy Clark at Lancaster University. They set up a writing centre that counterparts from the WAC movement (Russell et al., 2009) have described as inspiring. This academic literacies framework (Lea & Street, 1998) was the product of research and practical experience from tutors working in the post-1992 higher education landscape. These developments have been relatively localised in comparison to the widespread adoption of WAC/WID in the US, and Russell et al. (2009) have admitted that use of the approach for pedagogy development is in its infancy. However, researchers and teachers using the academic literacies framework (Parker, 2011; Lillis & Scott, 2007; Lea & Street, 2006) have established it as the dominant approach to higher education writing instruction in the UK (Wingate & Tribble, 2011).

Whilst academic literacies has primarily been used as a model for designing pedagogic interventions (Lea & Street, 2006), there is a growing research literature surrounding its use. Studies on academic literacies tend to be small scale and focused on specific groups of writers, reflecting the approach's emphasis on contextual detail. For example, early research conducted in academic literacies used interviews to explore the experiences of mature students starting their undergraduate studies (Lillis, 1997; Ivanic, 1998). They identified a number of issues relating to power and identity that students struggle with when learning to write at university. Other research has looked at writing in specific disciplines; Baynham (2000) presented data from interviews with Australian nursing students as a case study. Extracts from interviews on academic writing practices showed that nurses faced particular difficulties with writing, due to the emergent nature of the subject's discourse community. The dominance of qualitative methods within academic literacies research can be explained by the approach's roots in critical linguistics, and reflects the researchers' positions as practitioners working with small groups of students.

The development of academic literacies and the research conducted from this framework have highlighted the need to consider socio-cultural factors and issues of identity when developing writing instruction. This includes those targeting plagiarism because the complex social issues ignored by skills-based instruction (Lea & Street, 1998) are also overlooked in

discussions of plagiarism (Abasi, Akbari & Graves, 2006). As outlined, the academic literacies framework has been developed from the perspective of writing tutors at universities; their experience and knowledge of teaching undergraduate academic writing provides insight into contextual factors affecting student writing practices. Research from this area has provided detailed accounts of students' experiences and the problems they have encountered.

Pittam et al. (2009) position authorial identity as a desirable characteristic directly contrasted with the undesirable writing behaviour of unintentional plagiarism. This assumes a normative model of academic writing that emphasises originality and conceptualises authorial identity as an important feature of academic literacy. Despite this, the authorial identity approach has drawn on academic literacies research, particularly the work of Clark and Ivanic (1997) regarding writer identity. This has resulted in a conceptualisation of authorial identity situated in a sociolinguistic framework rather than a process-based model of academic writing (Elander et al., 2010; Pittam et al., 2009). The authorial identity approach is sensitive to disciplinary context, genre and individual identity (Abasi et al., 2006). However, one area that has been overlooked by the academic literacies movement is the psychology underlying these writing practices; exploration of the attitudes, beliefs and cognitions related to writing have been mentioned by Lea and Street (2006), but have not been the focus of their research. In addition, the authorial identity approach challenges the conceptualisation of academic writing tuition as remedial. By conceptualising development of authorial identity as a normal part of undergraduate development, the idea of remedying plagiarism is rejected. This can be contrasted with other approaches to plagiarism that focus on reducing negative behaviours undesirable in undergraduate writing for assessment. A number of these approaches are outlined in the following section, which is a review of the literature on student plagiarism.

1.4 Plagiarism and Intentionality

Plagiarism refers to the use of another writer's text without suitable attribution and is commonly conceptualised as an academic crime in higher education contexts (Howard, 1995). Plagiarism in higher education is a growing problem and concerns about it have been raised by scholars from universities around the world (Park, 2003). Howard (1999) argues that plagiarism is judged within a social context and is dependent upon the subjective norms of readers and writers. Recent discussions of plagiarism in the research literature reflect this

and provide a wide range of perspectives on the topic (Abasi & Graves, 2008; Flint, Clegg & Macdonald, 2006; Sutherland-Smith, 2008; Wilkinson, 2009).

Honour codes and plagiarism detection methods have been shown to be useful in the context of academic dishonesty (McCabe & Trevino, 2002). The use of honour codes has a long tradition in the US and McCabe and Trevino (1993, pp. 525) describe traditional honour systems as those where "students pledge to abide by an honor code and take responsibility for detection and sanctioning of academic dishonesty when it occurs." Roig and Marks (2006) described the implementation of an honour code at one university that is a typical example. A code was drafted and reviewed by various governing bodies of the institution. The resulting document was described by Roig and Marks (2006) as follows:

> The first two paragraphs represent a brief description of the institution and its mission articulating the expectation that the academic community will adhere to the principles of integrity. This preamble is followed by two numbered bullets with more concrete exhortations to refrain from participating in academically dishonest acts, to not accept such actions by other members of the community, and also to maintain an honorable and responsible conduct. (pp. 166).

Such codes are disseminated throughout campus and using online mediums. The written code forms a basis for a wider honour system that encourages a community with integrity (McCabe & Trevino, 2002). In addition, the written code can be integrated with wider mechanisms of student involvement, such as student-led judiciaries for dealing with violations of the code (McCabe & Trevino, 1993).

McCabe, Treviño and Butterfield (2001) describe a large programme of research examining honour codes and cheating in US institutions. This work included the development of specific strategies for encouraging academic integrity (McCabe & Pavela, 1997) rather than deterring cheating. McCabe and Trevino (2002) argue that honour code systems have been successful at reducing academic dishonesty when used in conjunction with other elements to promote academic integrity. Their research programme included qualitative (McCabe, Trevino & Butterfield, 1999) and quantitative studies (McCabe & Trevino, 1993) across a large range of institutions and using large samples of students. This research has not been limited to looking

at plagiarism as it included other forms of cheating, but intentional plagiarism featured heavily in the research. McCabe and Trevino (2002) suggest that student communities and a culture of academic integrity are required to make the honour code system effective. They report that student attitudes towards cheating are significantly different in institutions with honour codes compared to those without (McCabe, Trevino & Butterfield, 1999) and that consideration of context is important when promoting academic integrity (McCabe & Trevino, 1997).

In contrast to this wealth of literature originating from the US, few large studies on cheating in the context of the UK have been reported. In one early UK study, Franklyn-Stokes and Newstead (1995) found that academics' perceptions of cheating frequency were lower than their students. Using a multidisciplinary sample of 900 students from one institution, Newstead, Franklyn-Stokes and Armstead (1996) identified a number of individual differences associated with frequency of self-reported cheating behaviour. Despite more recent calls for UK institutions to take notice of the research from the US (Park, 2003), studies of the scale and multi-campus scope reported by McCabe, Treviño and Butterfield (2001) have not been conducted. Institutions in the UK have not ignored plagiarism, as a number have made wide ranging changes to existing policies (Macdonald & Carroll, 2006) and established new frameworks for preventing and detecting the 'offence' (Park, 2004). Educators have also produced advice for deterring plagiarism (Carroll, 2002) and a number of institutions have developed holistic policies incorporating the promotion of academic integrity (Macdonald & Carroll, 2006). Researchers have looked at the perceptions of cheating from the perspective of students (Ashworth, Banister & Thorne, 1997) and academic staff (Flint, Clegg & Macdonald 2006). These have provided an insight into some of the attitudes and beliefs around plagiarism. Despite this, use of actual honour codes is relatively rare in the UK and adoption of a US-style code is unusual enough to be reported in popular media (Shepherd, 2007). Large scale investigations of plagiarism in multiple UK institutions still represent a significant gap in the literature. Larkham and Manns (2002) have suggested that one of the barriers to investigation of the area is the reluctance of universities to discuss the subject. They encountered difficulties when they asked UK higher education institutions to provide their plagiarism policies, and figures about incidences of plagiarism.

Other English speaking countries have focused on plagiarism as an important area of research. Researchers in Canada have examined cheating in relation to identity (Abasi et al.,

2006), and have collaborated in international projects examining student attitudes towards plagiarism (Thompson & Pennycook, 2008). Australian educators have identified plagiarism (McGowan, 2005) and academic integrity (Fielden & Joyce, 2008) as important areas of concern. This is unsurprising given recent events in Australian higher education; a plagiarism scandal at University of Newcastle rocked the lucrative market of postgraduate programmes targeting Asian students in 2003. The allegations were serious enough to be investigated by the Australian government's Independent Commission Against Corruption (ICAC) and a damning report of failures in policy was published (ICAC, 2005). Since this event, Australian researchers have been particularly interested in researching plagiarism. In particular, they have examined context (Chandrasoma, Thompson & Pennycook, 2004), student perspectives (Devlin & Gray, 2007) and intentionality (Sutherland-Smith, 2008) in relation to plagiarism.

Current discussions on plagiarism continue to centre on deterring and detecting the offence. The framing of plagiarism in moralistic terms with negative connotations discourages scholarly discussion of the topic between researchers and institutions (Larkham & Manns, 2002). If this is the situation within the academy, students are even less likely to consider plagiarism as a suitable topic for discussion. Questionnaire research looking at staff and student perceptions of cheating suggests that students are not receiving consistent messages about the expectations relating to plagiarism (Wilkinson, 2009). The problems with plagiarism reported in research highlight the need for further research and pedagogic change on the issue.

Open discussion of these topics has been called for (Sutherland-Smith, 2003) and recent articles suggest that careful consideration of plagiarism is taking place. Academics have addressed the issue in their own professional writing communities (Chambliss, Bong, Greene, Kauffman, Loyens & Van Meter, 2010) and research examining plagiarism is ongoing. Substantial efforts are focused on an 'arms race' (Burke, 2004) with continuing development (Butakov & Scherbinin, 2009) and evaluation (Evans, 2006) of plagiarism detection software. Youmans (2011) used a quasi-experimental design to run two studies examining the deterrent effect of text-matching software in undergraduate psychology students. A sample of 90 students was randomised to two conditions: one group was warned that their work would be submitted to turnitin.com, the other was told that their work would not due to the lack of licenses while trialling the software. Surprisingly, Youmans reported that there was no significant difference in the degree of overlapping text across the two conditions. In fact, all

three assignments that were found to have verbatim copied unacceptable amounts of text originated from students in the warned condition.

Researchers have also cited the internet as an influence on student plagiarism (Sutherland-Smith, 2008) and called for methods of predicting plagiarism in student populations (Ercegovac & Richardson, 2004). However, Howard and Davies (2009) have warned that blaming the internet for student plagiarism is not helpful and that dealing with it needs to focus on writing instruction. Research in linguistics (Pecorari, 2003) has looked at plagiarism in second-language student work. Interviews with the writers about their pieces showed that these students did not intend to deceive their assessors, but misunderstood plagiarism conventions. Some of those interviewed in this study cited fear of committing plagiarism as the reason for not including citations.

Youmans (2011) reported another interesting finding in an experimental study: when comparing assignments written with the explicit instruction to include three citations to assignments without this instruction, it was found that percentage of text overlap was significantly higher when including citations. He proposes that this finding may be due to unconscious fixation with the language of a source, because the student has to refer to peer-reviewed work that they struggle to understand. These research findings suggest that reliance on a deter and detect model of plagiarism prevention can be detrimental for students who lack understanding of plagiarism. The second study was designed following the unexpected findings of the first. Youmans theorised that the participants in the first study had not modified their writing behaviours in relation to the use of Turnitin, because they had underestimated the effectiveness of the software. He asked another sample of 37 students to write down everything they knew about the Turnitin system and warned all of them that their assignments would be submitted to the system. A negative correlation between students' knowledge about Turnitin and their degree of overlapping text was predicted, but was not supported by the findings. These results suggest that text-matching software does not have a significant deterrent effect on students, calling the effectiveness of 'deter and detect' policies into question.

Further problems are evident when considering the issue of intentionality in plagiarism. Educators have voiced concerns about overlooking intentionality (Sutherland-Smith, 2008) and many scholars recognise that plagiarism is not always a result of cheating (Howard,

1995; Carroll, 2002). Interventions for reducing unintentional plagiarism have focused on improving referencing, citation and paraphrasing skills (Barry, 2006; Landau, Druen & Arcuri, 2002) but researchers have suggested that this has not affected levels of plagiarism (Pittam et al., 2009). These attempts to improve academic literacy skills are an example of the approaches criticised by the academic literacies movement (Lea & Street, 2006). In contrast, the authorial identity approach seeks to improve academic writing and ownership in a broader sense; in particular, there is an understanding that writer identity (Clark & Ivanic, 1997) influences the way that an individual engages with texts.

There is recognition that not all plagiarism and plagiarists are the same. A number of cases of plagiarism are believed to be unintentional and are unlikely to be prevented by the discouragement of plagiarism as an act (Sutherland-Smith, 2008). Research has also found that students do not always have clear conceptions of plagiarism (Roig, 1997). It has been shown that students often cannot define the offence (Ashworth et al., 1997), so it is difficult to see how students can be expected to avoid this academic crime.

Research examining plagiarism is interdisciplinary and many areas have contributed to the literature on the topic. Ercegova and Richardson (2004) conducted a literature review of research on plagiarism and found that scholars had examined the area from the disciplinary perspectives of education, psychology, library studies and software development. As a result there is a range of terminology used in the literature. Sutherland-Smith (2008) urges educators to consider 'intentionality', Howard (1995) describes 'patchwriting' as a developmental method, Chandrasoma et al. (2004) point out a difference between 'transgressive' and 'nontransgressive' 'intertextuality', and Abasi et al. (2006) suggest that lack of identity is influential on 'discourse appropriation'. Whilst these approaches and terms argue that incidences of unintentional plagiarism do not deserve the negative connotations associated with the term 'plagiarism' (Howard, 1999), it does not appear to be a message that is reaching the rest of the academy. Clegg and Flint (2006) have described a 'moral panic' about plagiarism and Valentine (2006) accuses the academy of ignoring the complex issues involved, to concentrate on traditional moral-based conceptualisations of plagiarism.

Unintentional plagiarism is an even more problematic issue than academic dishonesty, because it is not possible to deter something that students are not aware they are doing. Ashworth et al. (1997) showed that students are concerned because they do not fully

understand plagiarism and many students are not confident they can avoid it (Elander et al., 2010). Roig (1997) suggests that students are not able to identify plagiarism as readers of written pieces, so it is unlikely that they can detect it in their own writing. Sutherland-Smith (2008) outlines the importance of intentionality in her plagiarism continuum model, and suggests that careful consideration about the intentionality of each plagiarism case needs to be taken by tutors. This is not a simple task and Larkham and Manns (2002) point out that the distinction between intentional deceptions and 'poor scholarship' is often difficult to determine. In addition, this approach is only applicable once unintentional plagiarism has been detected and following this, it is not clear how further incidences can be reduced.

It has been suggested that teaching referencing and citation techniques is the answer for getting students to avoid plagiarism (Neville, 2007). Whilst referencing guides are important and lack of referencing can lead to plagiarism (Pears & Shields, 2010), it is an oversimplification of the problem. A pedagogical approach that concentrates on teaching referencing skills is not adequate and separates the plagiarism issue from the teaching of disciplinary knowledge. Although contemporary approaches are including efforts to help students understand plagiarism as well as teaching referencing skills (Williams & Carroll, 2009), plagiarism needs to be considered in the context of social and discoursal factors. An approach that suggests lack of referencing skills as the sole cause of unintentional plagiarism does not include consideration of the issues that are important in the academic literacies (Lea & Street, 1998) model of writing. As mentioned in the previous sections social factors are extremely important in academic writing. Clark and Ivanic (1997) describe these as the 'politics of writing' and include writer identity issues as one of their primary topics of investigation. Ivanic (1998) argues that the power relationships and levels of authority present in an academy context influence the way that students represent themselves in text. This has also been identified as an issue when discussing unintentional plagiarism (Abasi et al., 2006) and these ideas have been used to develop an approach to plagiarism that focuses on authorial identity (Pittam et al., 2009).

1.5 Summary

The current chapter has presented literature from three broad areas of research that relate to authorial identity. The review of this literature has shown that research on student academic writing and plagiarism can be conceptualised as three largely separate discourses: psychological research about writing, sociolinguistic approaches to writing pedagogy, and

research on plagiarism. The research presented in the current thesis draws heavily on all three of these areas and brings these seemingly disparate approaches together. The current chapter has shown that these differing perspectives are sometimes in conflict with each other and often emphasise different aspects of writing and plagiarism. The following chapter presents a review of research on authorial identity and illustrates how these three perspectives can mutually contribute to inform writing pedagogy.

Chapter 2: Literature Review of Authorial Identity Research

2.1 Overview

Chapter one outlined the broad areas of academic writing and plagiarism, topics that form the context for research on authorial identity. The current chapter introduces authorial identity by presenting a review of the literature. An initial pool of material for this review was collated using searches in the following indexed databases: Educational Resources Information Centre (ERIC), Psychinfo, Google Scholar and Web of Knowledge. Publications from this search were examined and the review was expanded to include literature cited by materials in the initial pool. The analysis of the literature is presented in three parts. The sociolinguistic concepts of writer identity and authorial identity are examined in the first section, followed by a review of the research that has developed an authorial identity approach to plagiarism; this second section focuses on authorial identity as a psychological construct of beliefs, attitudes and values that can be improved and targeted through pedagogy. Finally, the third section evaluates competing models of authorial identity that have been developed using psychometric analysis of Pittam et al.'s (2009) Student Authorship Questionnaire (SAQ) measure. In addition, a summary of the review highlights some key observations in relation to the available literature.

2.2 Authorial Identity in Discourse Studies

Over the last 20 years, there has been a rejection of the concept of academic writing as an objective presentation of facts, and recognition that academic disciplines use socially constructed genres of persuasive discourse (Hyland, 2005). This has resulted in studies examining the way in which language use constructs and negotiates social relations in academic contexts. Although researchers in literary disciplines have a tradition of examining author identity in relation to fiction, poetry and other forms of 'creative' writing (Mace, 1992), the importance of identity in academic writing is comparatively overlooked (Clark & Ivanic, 1997). Composition research has suggested that identity formation is an important component of writing (Ivanic, 1998) and that perceived identity of the author is important to a reader (Hatch, Hill & Hayes, 1993). As the psychological concept of authorial identity has been developed from this sociolinguistic work into "the sense a writer has of themselves as an author and the textual identity they create in their writing" (Pittam et al., 2009, p.154), it is necessary to review this body of literature to situate the pedagogic and psychological research presented in this thesis.

The social interaction facilitated by academic writing has been examined in relation to a number of interrelated concepts, such as persuasive argument (Hyland, 1998), addressing of the audience (Hyland, 2001a), voice (Ivanic & Camps, 2001), disciplinary context (Hyland, 2001b), and writer identity (Hyland, 2002; Ivanic, 1998). In particular, writer identity has been the focus of discussions in discourse studies (Ivanic, 1998), especially in relation to the concept of authorial voice (Matsuda & Tardy, 2007; Stapleton & Helms-Park, 2008). These have identified construction of authorial identity as an important element of professional academic writing; for example, one interview study described a metaphor for particular textual identities as kick-boxers engaging in 'robot kung fu' using aggressive academic writing (Tse & Hyland, 2008, pp.1232). In addition to the focus on interactions between professional academics, studies have examined student constructions of identity in text (Clark & Ivanic, 1997; Tang & John, 1999), and the impact that these identities have on academic integrity (Thompson, 2005).

Although academic writing has common styles and conventions, particularly within disciplinary discourses (Tang & John, 1999), Ivanic and Camps (2001) argue that all writing conveys an individualistic representation of the writer to the reader by drawing on Bakhtin's (1986) concept of voice. Clark and Ivanic (1997) argue that process models of writing (e.g., Hayes & Flower, 1983) do not adequately emphasise the social aspects of writing. In particular, concentration on individual cognitive processes overlooks some of the social difficulties experienced by student writers; Bartholomae (1985) argues that student writers are expected to appropriate a specialised discourse and convey a sense of authority, but this is required long before the student has developed the necessary skills and confidence to do so convincingly. As a result, Bartholomae (1985, p.139) describes student attempts to imitate academic discourse as a "bluff", that is difficult to carry off when facing the requirements of convention and the history of the discipline. In response to these concerns, Clark and Ivanic (1997) developed a model of writer identity using research from the Teaching of Writing Research Group at Lancaster University.

Clark and Ivanic's (1997) model includes four aspects of writer identity: subject-positions, the autobiographical self, the discoursal self and the self as author (see Figure 3). The first aspect, labelled subject positions, is described by Clark and Ivanic (1997, pp. 136) as the "socially available positions for self-hood." This abstract concept refers to the socially constructed positions that are embedded within societal norms relating to discourse. For

example, contemporary categories of subject disciplines, specialisations and their associated discourse traditions (Russell, 2002), limit the positions that can be adopted by a writer. The positions available to a writer are determined by the social context of composition and come with abstract prototypical identities that represent possible selves for writers to adopt. Although these abstract conventions and identities exert power over writers, Clark and Ivanic argue that this power is socially constructed, so it can be, and in fact often is, challenged by individual writers.

Figure 3. Clark & Ivanic's (1997) writer identity model

Content removed for copyright reasons. The relevant figure is available in the following publication:

Clark, R., & Ivanic, R. (1997). *The Politics of Writing.* London: Routledge.

The other three aspects of writer identity in Clark and Ivanic's (1997) model are more concrete than the first; they refer to the individual writer and the conceptualisations of self that they bring to composition. The autobiographical self refers to aspects of the writer's life history that enable them to make meaning during composition. Clark and Ivanic argue that each individual writer has unique experiences that influence how they approach a task, how they frame their discoursal objectives, and how they view external sources. The discoursal self is the way in which a writer self-represents in text; this self-representation is achieved by

drawing on the socially available possibilities of the 'subject positions' aspect, and presenting this identity in text for a reader. Using examples from case studies, Clark and Ivanic argue that this self-representation often happens unconsciously through the expression of voice as form of language: this conceptualisation of voice is concerned with the discourse conventions that a writer uses to shape their composition. Voice as content is differentiated from voice as language as it refers to the writer's expression and ownership of ideas and beliefs. Voice as content is the main focus of Clark and Ivanic's third aspect of writer identity: the self as author. This aspect is related to a writer's sense of authority and their authorial presence in the text. Authority and authoritativeness are expressed by demonstrating control over writing and the content of the text. Although the concept of self as author is closely linked to the other two aspects of writer identity and to the abstract concept of subject-positions (Clark & Ivanic, 1997), it has also been studied and written about as a separate topic (e.g., Greene, 1995; Kaufer & Geisler, 1989).

Clark and Ivanic (1997) present extracts from writings by seven mature students to show the degrees of authorial presence that are conveyed in academic writing. At one end of this spectrum were examples in which the writers distanced themselves from the role of author by removing themselves from their writing and deferring authority to alternative sources. At the other end, writers used various methods to establish their authorial presence in the text and demonstrate authoritativeness in relation to the content of the text. Clark and Ivanic further emphasise the variety in this aspect of writer identity by outlining the textual features associated with establishing an authorial presence (see Table 1). In addition, Clark and Ivanic point out that the authoritative positioning of an author can vary in consistency between individuals. Even in their small sample of extracts, they found that some individuals position themselves as more or less authoritative from section to section of an essay, whereas others maintained a consistent level of authorial presence throughout. Although a certain level of authority is expected in all academic writing, subject areas have different expectations in relation to authorial voice (Russell, 2002). When considering the factors stemming from a variety of disciplines, individual characteristics and genres, the complexity of authorial presence in the higher education context is apparent.

Table 1. Textual features associated with establishing authorial presence (Clark & Ivanic, 1997).

Content removed for copyright reasons. The relevant table is available in the following publication:

Clark, R., & Ivanic, R. (1997). *The Politics of Writing.* London: Routledge.

The concept of self as author and its association with authority forms the basis for understanding authorial identity in academic writing. Although it is an aspect of writing that is not explicitly considered by student writers (Pittam et al., 2009), assessors in the higher education context appear to be aware of issues relating to authority in text (Lea & Stierer, 2000). Clark and Ivanic (1997) present an example of this in the form of a tutor's comments when faced with a student's unsupported criticism of Friedrich Engels; the comment was written in capitals to signify the tutor's annoyance that the student had overstepped the limits of their authority. This example serves to highlight how difficult authorial presence can be for a student; they are asked to imitate the confidence and writing of academics, but without the claims to authority that are used by professional academics to support this level of authoritativeness.

The construction and projection of an authorial identity in text has been described as particularly difficult for non-native English speaking students (Abasi et al., 2006; Hyland, 2005), and researchers from the discourse studies perspective have used linguistic analysis to examine authorial presence in student academic writing. For example, Tang and John (1999) analysed 27 student essays submitted for a first year undergraduate English module at the University of Singapore. After a preliminary review of the essays and the literature on pronoun use, Tang and John developed a taxonomic system of six pronoun uses with which they coded the corpus of student papers. Each of these categories was associated with an identity: the representative, the guide, the architect, the recounter, the opinion-holder, and the originator. Conceptualising these identities as indicators of authorial presence, Tang and John suggested that the rhetorical roles were associated with differing levels of power (see Figure 4).

Figure 4. Tang & John's (1999) categories of first-person pronoun use and associated levels of authorial presence.

Content removed for copyright reasons. The relevant figure is available in the following publication:

Tang, R., & John, S. (1999). The 'I' in identity: Exploring writer identity in student academic writing through the first person pronoun. *English for Specific Purposes, 18,* 23-29.

This analysis found that students rarely used first-person pronouns associated with powerful authorial presence. Tang and John (1999) suggest that this was due to students' reluctance to elevate themselves to the position of author, because of the role's association with authority. Hyland (2002) drew on this work to compare levels of authorial identity in 64 Hong Kong undergraduate theses with a large corpus of 240 published research articles; using self-mention as an indicator of authorial identity, Hyland found that professional academic writers were four times more likely to explicitly project authorial identity in text. The textual analysis also found that professional writers were more likely to use self-mention for elaborating an argument, whereas students used passive grammatical options to avoid presenting themselves as a thinker, and to distance themselves from their arguments. In addition to the textual analysis, Hyland conducted interviews with tutors, and focus groups with authors of the undergraduate data corpus; he found that the identities students chose to adopt were influenced by a variety of social and psychological factors. Hyland concludes that some of the problems were associated with a reluctance to display an authoritative persona in Asian culture, although he also suggests that "it is equally possible however that native English speaking students experience similar problems when entering university" (Hyland, 2002, p.1111).

These concerns have mainly been raised about English for Speakers of Other Languages (ESOL) contexts; this could be because universities which teach in English, but are located in non-English environments, employ academics from literature disciplines to teach academic writing. However, there is growing recognition that authorial identity and authority is

important in native-English speaking environments; for example, Thompson (2005) conducted case studies looking at two Australian undergraduates, one was a native English speaker from Australia and the other had lived in Australia for 38 years. Despite the lack of ESOL based culture differences, Thompson concluded that both students struggled to assert authoritative authorial identities, resulting in derivative writing and isolated incidences of plagiarism.

Other scholars have argued that issues around identity, context and authorship should be considered in relation to plagiarism (Howard & Robillard, 2008; Sutherland-Smith, 2005). Tang and John (1999) have suggested that writing pedagogy needs to highlight issues relating to writer identity, so that students can make conscious decisions about how they are going to portray themselves in writing. As the construction of authorial identity is socially negotiated in relation to the reader (Hyland, 2005), it is particularly important that these issues are considered in the context of assessed academic writing - a situation where the power balance between reader and writer is heavily skewed in the assessors favour.

Discourse approaches to authorial identity have raised a number of key issues and highlighted the complex nature of academic writing and plagiarism. Insights into student writing have been useful for identifying the multifaceted barriers with which developing novice writers are faced. In particular, scholars from discourse studies have urged their colleagues in other subjects to be mindful of the myriad issues that influence plagiarism. However, calls to reconceptualise plagiarism as an issue of identity (Howard & Robillard, 2008) have largely gone unheeded; Sutherland-Smith's (2011) semiotic analysis of plagiarism policies found that many processes adopted by universities still favour punitive legal outcomes. This raises concerns that pedagogy is overlooked, despite attempts to introduce holistic policies (Macdonald & Carroll, 2006). Although frustrating for educators seeking pedagogic solutions (e.g., McGowan, 2005), it is perhaps understandable that universities are relying on the measures that are already in place, as they are without credible alternatives. Whilst the use of honour codes has been suggested as a way of reducing intentional plagiarism (McCabe, 2005), pedagogic approaches to unintentional plagiarism still focus on remedial aspects of writing, such as educating students about definitions of plagiarism and teaching them referencing skills (Kaposi & Dell, 2012; Klein, 2011). There is a lack of pedagogic approaches dealing with the issues raised by discourse studies research, making the development of authorial identity approaches a priority in the higher education sector. In

addition, the development of these concepts from a discourse perspective has shed light on the way in which authorial identity is conveyed in text, but the psychology behind these writing behaviours has not been fully explored. Clark and Ivanic (1997), Thompson (2005), and Hyland (2002) have included interviews and case studies to understand the issues behind student problems with authorial identity, but there is great potential for examining the psychological factors relating to authorial identity in students. The following section presents recent research attempts to build on the contributions of discourse based research and explore this area from the perspective of student attitudes, beliefs and values.

2.3 Authorial Identity as a Pedagogic Approach

Attempting to improve authorial identity as a pedagogic approach to plagiarism is a relatively recent development. Abasi et al. (2006) were the first to suggest increasing authorial identity as a specific target of instruction; this followed a comparative case study of five graduate students at a Canadian university whose native language was not English. Using analysis of assignments, tutor comments and interviews with the participants, Abasi et al. split their sample into two groups and compared three more experienced writers with two less experienced writers. They identified a lack of authorial identity as a cause for the less experienced writers' unintentional plagiarism. The experienced writers, on the other hand, were aware of their own textual identities and adopted strategies to represent themselves in the text. These were categorised as approaches aiming to represent themselves in three ways: knowledgeable of source texts, aligned with their disciplinary discourse, and as an author with authority. There were also examples of conflict related to identity in Abasi et al.'s interviews; participants rationalised their resistance to feedback by conceptualising criticism as challenges to their identity as authors. These findings highlight the importance of self-representation in relation to plagiarism and identify some of the ways in which identity can impact rhetorical goals.

Abasi et al. (2006) further suggested that the differences between their two groups were due to different levels of academic socialisation. However, this was not supported empirically by their findings, because assumptions that longer enrolment in a graduate programme equates better academic socialisation have questionable validity. In addition, the case study approach taken in this work meant that the findings have little generalisability. For example, both less experienced writers were from Iran and the more experienced writers were from other countries; the differences in authorial identity may be attributable to culture rather than level

of experience. Nevertheless, Abasi et al.'s suggestions are plausible explanations and the issue of academic socialisation warrants further investigation using objective methods.

Drawing on Abasi et al.'s (2006) work with ESOL students, Pittam et al. (2009) conducted a mixed methods study that applied the concept of authorial identity to a sample of psychology students in three UK institutions. They used focus groups to identify a number of issues related to authorial identity and found that students in their sample faced similar difficulties to those identified in graduate ESOL students by Abasi et al. In particular, students in Pittam et al.'s sample did not identify with the role of author but rather saw themselves as editors of their assignments. The students also suggested that highly derivative writing tended to be rewarded in assessments and described conflicting messages from tutors in relation to the importance of originality. The confusion surrounding authorial identity and originality reported by Pittam et al. mirrors the confusion about plagiarism that has been identified in students (Ashworth et al., 1997; Roig, 1997).

Following on from these focus group findings, Pittam et al. (2009) developed a questionnaire measure for examining authorial identity in students. The Student Authorship Questionnaire (SAQ) was administered to over 300 psychology students; factor analysis was used to identify six subscales that were meaningful in the context of authorial identity and plagiarism. Although the SAQ has some limitations as a psychological measure, Pittam et al. identified a number of authorial identity issues using this tool. The factor structure of the SAQ (see Figure 5) has been used as a framework for understanding authorial identity that has formed the basis for more recent research (e.g., Kinder & Elander, 2012; Ballantine & Larres, 2012; Maguire et al., 2013). This has led to recognition of authorial identity's association with plagiarism, as a number of commentators have highlighted the topic as an area for further study. For example, Kaposi and Dell (2012) describe the growing body of authorial identity research as an emerging developmental discourse on plagiarism, and contrast this strand of research with another developmental discourse identified as the 'holistic' approach of Macdonald and Carroll (2006). Davis and Carroll (2009) also suggested that Pittam et al.'s study demonstrated that students are not only acquiring new skills, but also adapting prior beliefs about plagiarism. In addition, Pittam et al.'s study made a number of pedagogic recommendations that have been influential on attempts to include positive pedagogic aims for dealing with plagiarism.

Figure 5. Factor structure for Pittam et al.'s (2009) SAQ model of authorial identity

Content removed for copyright reasons. The relevant information is available in the following publication:

Pittam, G., Elander, J., Lusher, J., Fox, P., & Payne, N. (2009). Student beliefs and attitudes about authorial identity in academic writing. *Studies in Higher Education, 34* (2), 153-170.

Another influential piece of research using the authorial identity approach is Elander et al.'s (2010) article, which was authored by the same research team involved in the Pittam et al. (2009) publication. Elander et al. developed an authorial identity intervention that was delivered to 364 psychology students at three UK universities. This intervention focused on

developing students as authors in five parts: explaining definitions of author and authorship, using examples to discuss authorial decisions and style, examining examples of student writing with varying levels of reliance on source material, discussing high profile cases of plagiarism committed by professional writers, and discussing authorship and plagiarism in the context of the students' own writing. This intervention was delivered to first, second and third year undergraduate students, as well as to masters level students. Taking pre and post measures of authorial identity using the SAQ, Elander et al. found promising positive results as part of their evaluation. In particular, statistically significant increases were reported across the four SAQ subscales associated with increased authorial identity, and there were significant decreases in the two subscales related to lower authorial identity. A short evaluation questionnaire also showed that students felt positive about the intervention and they reported benefits to their avoidance of plagiarism and writing of assignments. In addition to the questionnaire measures, Elander et al. conducted focus groups to further explore their findings.

Elander et al.'s (2010) qualitative findings largely reinforced their quantitative analyses and provided explanations for some of the effects reported. The focus groups suggested that the intervention facilitated students' realisation that they were authors of their assignments. In addition, students explained that the intervention had changed their writing behaviours by encouraging them to take more care over their written work and adopt writing approaches that included their own ideas. However, the qualitative data also allowed some important insights into how the intervention could be improved; students suggested that practice exercises would have been suitable and that more attention needed to be focused on borderline cases of plagiarism. In addition, some students felt that the intervention was not pitched at a suitable level for them, suggesting that authorial identity interventions need to take level of study into account. Elander et al.'s intervention is the first plagiarism pedagogy focused on authorial identity reported in the literature; as a result, it has informed recent attempts to achieve similar success in other contexts. However, the promising results of Elander et al.'s evaluation need to be interpreted with caution as there are caveats to the findings. Firstly, the lack of a control group means that the intervention's effectiveness is not comparable to any other form of instruction on plagiarism; this is an area that could be addressed in further research. Secondly, although post intervention measures showed improvements, the validity and reliability of the SAQ has not been fully tested, with some elements showing poor psychometric properties. In addition, the SAQ is a self-report

measure, as were the other evaluation measures used; Elander et al. did not find any significant effects in relation to actual incidents of plagiarism in these departments, highlighting the need to examine the construct's impact on student behaviour.

The Pittam et al. (2009) and Elander et al. (2010) studies have been presented and discussed in detail, because they represent the core publications underlying the authorial identity approach to plagiarism. Both articles were published in international higher education journals aimed at a general audience interested in teaching and learning in higher education. This not only raised awareness of authorial identity as an issue, but also presented tools for further research in the form of the SAQ and authorial identity teaching materials. A number of researchers have recently drawn upon these two studies to examine specialised contexts in greater detail; these authorial identity studies are discussed below. They include some promising results that show potential, but there are a number of limitations associated with each project. Some of these are due to the poor psychometric properties of Pittam et al.'s SAQ, whereas other studies have methodological issues of their own.

Ballantine and Larres (2012) conducted a study using Pittam et al.'s (2009) SAQ measure to examine authorial identity in a sample of 217 undergraduate accounting students at an Irish university. They reported that students who participated in their study had positive perceptions of their authorial identity as measured by the SAQ, and they found statistically significant improvements in SAQ item scores over three years of study. These findings are situated in the context of the course, as Ballantine and Larres report that instruction on authorial identity was included as part of a first year student development programme delivered at the institution investigated. In addition, staff in the department were encouraged to reinforce the importance of authorial identity throughout their teaching. This context is not typical of UK institutions and departments where approaches focusing on learning citation skills and definitions of plagiarism are the most common features of education on plagiarism (Kaposi & Dell, 2012). It should also be noted that attention to authorial identity was complementary to typical instruction methods on plagiarism, so positive results cannot be attributed to explicit instruction on authorial identity; it is possible that typical instruction on plagiarism improves authorial identity independently of focused instruction. In fact, improvements in authorial identity cannot be attributed to any of the instruction methods that Ballantine and Larres mention, because they did not use a control group, or pre and post

measures to explore this. Statistically significant improvements may be due to slow developmental processes that Abasi et al. (2006 p. 279) describe as a "fact of life".

Despite these limitations, Ballantine and Larres' (2012) findings include interesting insights into authorial identity development in this context. Their results indicate that five of ten SAQ items relating to authorial identity showed significant differences between first and second year students, as did four of eight items associated with approaches to writing. They also reported differences between second year and third year students on two of the items; one associated with authorial identity and one with approaches to writing. Overall, Ballantine and Larres (2012) use these results to make some limited comparisons to Pittam et al.'s (2009) results, but their reporting of statistical results is somewhat convoluted; firstly, they use Mann-Whitney U tests to identify differences between two stages of study at a time. Pittam et al. (2009) analysed the effects for year of study using one-way Analysis of Variance tests (ANOVAs), which is a more suitable technique for examining these effects. In fact, a Jonckheere's trend test, as used by Norton (1990), would be more appropriate than either of the statistical tests reported in these studies. Secondly, these analyses are conducted on item scores and the authors do not appear to have calculated subscale scores for any of the SAQ measures. Whereas it is not possible to address the first limitation without access to their data, the second issue can be examined with caution. From Ballantine and Larres' (2012) reported mean scores, estimates for the mean factor scores from their dataset can be calculated using Pittam et al.'s SAQ scoring instructions. As Ballantine and Larres (2012) did not reverse score contra-indicative items as advised by Pittam et al. (2009), it was necessary to re-calculate these as well; the mean factor scores from Ballantine and Larres' study are reported below in Table 2. These should be interpreted with the caveat that measurement errors associated with rounding and averaging are inflated.

Table 2. Estimated mean SAQ subscale scores from Ballantine & Larres' (2012) study

Content removed for copyright reasons. The relevant data used for reanalysis is available in the following publication:

Ballantine, J., & Larres, P. M. (2012). Perceptions of Authorial Identity in Academic Writing among Undergraduate Accounting Students: Implications for Unintentional Plagiarism, *Accounting Education: An International Journal*, *21*(3), 289-306.

This data allows Ballantine and Larres' (2012) mean factor scores to be compared against the findings reported by Pittam et al. (2009). Figure 6 shows the mean factor scores for confidence in writing and understanding authorship; Pittam et al. reported significant stage of study effects for these subscales and Ballantine and Larres reported effects for a number of items associated with these factors, although they did not examine the items together as subscales.

Figure 6. Line chart of mean confidence in writing and understanding authorship SAQ subscales across stages of study in Pittam et al.'s (2009) and Ballantine and Larres' (2012) research.

Content removed for copyright reasons. The relevant data used for this figure is available in the following publications:

Ballantine, J., & Larres, P. M. (2012). Perceptions of Authorial Identity in Academic Writing among Undergraduate Accounting Students: Implications for Unintentional Plagiarism, *Accounting Education: An International Journal*, *21*(3), 289-306.

Pittam, G., Elander, J., Lusher, J., Fox, P., & Payne, N. (2009). Student beliefs and attitudes about authorial identity in academic writing. *Studies in Higher Education, 34* (2), 153-170.

These comparisons reveal interesting similarities between the two studies, despite the difference in disciplinary context. Firstly, responses for the knowledge to avoid plagiarism subscale are higher than scores for confidence in both samples, suggesting that students believe they have the knowledge to avoid plagiarism, despite having confidence issues in relation to writing; both articles suggest that confidence in writing is an area that needs attention. These findings reflect current plagiarism instruction practices that focus on teaching students how to avoid plagiarism rather than aiming to improve student writing. Another duplicate finding is that both studies report a statistically significant drop in confidence between increasing stages of study. In Ballantine and Larres' results this is between years one and two as measured by two confidence items from the SAQ; in Pittam et al.'s study, scores on the confidence in writing subscale increased significantly between years one and two, and then fell significantly between years two and three. Although the trend is visibly different (see Figure 6), both articles discuss the statistically significant falls as unexpected, and suggest that this could be due to increasing pressures and writing task

difficulty. However, this could also arise from withdrawal of writing support; typically, writing instruction is focused at the start of undergraduate teaching to address well-documented writing issues associated with transition to higher education (Elander et al., 2011; Norton, Keenan, William, Elander & McDonough, 2009). It is perhaps unsurprising that student confidence declines as support related to writing is reduced.

Writing ability is developed incrementally and academic writing is a particularly complex form (Elander et al., 2006), with some scholars describing it as tacit knowledge that needs to be practiced and demonstrated (Elton, 2010). Writing interventions targeting the transition stage into higher education are often used to develop student writing skills up to a required standard, but the lack of attention to writing that follows could have a detrimental effect on student beliefs about writing. In addition, Ellery (2008) has urged for plagiarism education to recognise the role of acquiring attitudes and values as part of a long process, casting doubt on the effectiveness of short plagiarism interventions that are commonly delivered to first year students. In particular, completion of writing modules or plagiarism workshops may lead students to believe that their writing has developed to the requisite level for higher education study, making them unaware that the difficulty of writing tasks and assessor expectations will continue to increase. The lack of further focus on writing may reinforce this and students could fail to attribute difficulties with assessments to a lack of writing development; instead poor grades can be attributed internally to the individual, resulting in detrimental effects to self-efficacy and confidence. Dweck (2000) has investigated similar issues in relation to intelligence, self-efficacy and educational performance, suggesting that students who conceptualise their abilities as fixed entities can be susceptible to helpless responses, whereas understanding abilities as incremental can aid development and motivation. This should not be taken as a call to abandon focused writing instruction when students begin higher education, but to continue instruction throughout the entire course of study. Indeed, Elander et al. (2010) reported that the impact of their intervention was greatest for students in the first year of study, suggesting that intensive attention at this stage is appropriate; however, the positive impact of the intervention was reported across the sample that included other stages of undergraduate study and masters level students, suggesting that there is a need to address these issues across the entire spectrum of higher education. Combined with Dweck's (2000) theories of self-efficacy, the authorial identity approach may provide useful insights for explaining students' problems with confidence in writing (Pittam et al., 2009).

One recent study specifically focused on the association between self-efficacy and authorial identity; Maguire et al. (2013) conducted a study after introducing a writing induction programme informed by the authorial identity approach. They examined self-efficacy, authorial identity and learning strategies in a sample of first year undergraduate students from a department of Nursing, Midwifery and Health Studies. Their induction programme titled "Finding your academic voice" emphasised the importance of academic writing and encouraged students to understand writing as a target for incremental development. Data collected from 77 students using the SAQ (Pittam et al., 2009), measures of writing and reading self-efficacy (Prat-Sala & Redford, 2010), and sense of self as a novice writer (adapted items from Sommers & Saltz, 2004) showed that two of the SAQ subscales – 'understanding authorship' and 'knowledge to avoid plagiarism' - were significantly correlated with the other constructs (Maguire et al., 2013). In addition, they were also positively correlated with deep learning and strategic learning in this sample. This suggests that authorial identity is linked to self-efficacy and sense of self as a novice writer, but Maguire et al. (2013) do not report the other subscales of the SAQ, resulting in an unclear picture. Using subsamples, they also collected repeated measures data across three time points in the first year; they reported that changes in 'understanding authorship' and 'knowledge to avoid plagiarism' were not significant. However, the first time point for data collection is post writing induction, so the results do not reflect an ineffective authorial identity intervention. Moreover, Maguire et al. had difficulties recruiting participants across all three time points to facilitate this part of analysis, so the lack of significant findings could be due to insufficient statistical power.

In addition to the disciplinary contexts that have been examined, Kinder and Elander (2012) have examined authorial identity in relation to dyslexia. In a comparison of 31 students with dyslexia with 31 non-dyslexic students, they found that dyslexic students had significantly lower scores for confidence in writing and understanding authorship, suggesting that students with dyslexia are likely to have more issues with authorial identity. This study also administered the Approaches and Study Skills Inventory for Students (ASSIST) (Tait, Entwistle & McCune, 1998) to examine the relationship between authorial identity and approaches to learning. Correlations showed a number of statistically significant relationships between SAQ factors and approaches to learning; these were between constructs that were theorised to be related, providing evidence of construct validity for the SAQ (Kinder & Elander, 2012). These quantitative findings were reported alongside a thematic analysis of

interviews with six dyslexic students. Kinder and Elander's qualitative findings generally mirrored those reported in Pittam et al.'s (2009) focus groups, and students did not understand their issues with authorial identity as related to their dyslexia.

The growing literature on authorial identity indicates interest from educators aiming to develop the approach, which is a welcome development, but it is unclear whether the limitations of the core studies have been fully appreciated. For example, the questionable six-factor model identified by Pittam et al. (2009) has become the framework for authorial identity pedagogy. In addition, this model was developed on a sample exclusively composed of psychology students; the need to address these issues is pressing, because the model is being used to examine other disciplines, such as healthcare (Maguire et al., 2013). There have been recent efforts to develop the SAQ model further (e.g., Ballantine, Guo & Larres, 2013) which will be discussed in the following section. However, the authorial identity literature lacks a comprehensive model that has been developed systematically in a multidisciplinary context. It is understandable that tutors wish to adopt authorial identity practices quickly, as it is a novel perspective on the urgent issue of plagiarism (Park, 2003); however, further work developing the core framework and understanding of authorial identity is necessary to support practical applications. Although practical and applied research often has great value in pedagogic settings, particularly in relation to action research (Norton, 2009), the contribution of theoretical understandings to higher education pedagogy should not be underestimated. As Norton (2010) states in a critical book review:

> Pedagogical research should not only contribute to practice; it must also contribute to theory. To ignore this aspect is to hold back this developing field from being appropriately recognised and valued as a research field of equal status to the traditional discipline and subject-based research. (p. 342).

The research presented in the current thesis intended to address some theoretical issues related to authorial identity, in order to better support the applied research that is already being undertaken (e.g., Maguire et al., 2013; Ballantine & Larres, 2012; Elander et al., 2010). Transparency of theory development allows constructs to be suitably evaluated, revised, and if necessary, discarded. To further illustrate the need for a solid theoretical basis, some of the problematic issues related to models of authorial identity are presented in the following section.

2.4 Contemporary Models of Authorial Identity

Attempts to establish a model of authorial identity using the SAQ measurement have resulted in two competing factor structures, the original six-factor model from Pittam et al.'s (2009) SAQ development and a three-factor model based on a recent study with accounting students (Ballantine et al., 2013). Both of these models provide useful information about authorial identity as a psychological construct, although there are substantial limitations of these frameworks based on the psychometric procedures used to develop the SAQ.

Firstly, the item generation procedure used for the SAQ is unclear and content validity was only examined in relation to a review of the literature (Pittam et al., 2009). Secondly, the Exploratory Factor Analysis (EFA) extraction method is not reported and the Kaiser (1960) Eigenvalue over one rule was used to determine dimensionality of the model. This method of deciding on the number of factors to extract tends to over-specify the dimensionality of constructs and has been widely criticised in the psychometric literature (Hayton, Allen & Scarpello, 2004; Velicer, Eaton & Fava, 2000). Thirdly, the SAQ was not optimised using an iterative process of removing items with the use of internal reliability analysis. Finally, the psychometric properties of the final model reported by Pittam et al. are poor; three of the factors only had two items loading, there were numerous cross-loadings onto factors and none of the Cronbach's alphas for subscales were above .70. These issues suggest that the SAQ items are not a reliable and valid measure of authorial identity in students.

Despite the psychometric problems already associated with Pittam et al.'s SAQ, Ballantine et al. (2013) evaluated the 18 items again by administering the scale to over 500 undergraduate accounting students from three Irish universities. Using Principal Components Analysis (PCA), interpretation of a scree plot (Cattell, 1966) and direct oblimin rotation, Ballantine et al. identified a three-factor model of authorial identity using 12 items of the SAQ; they then compared this to other theorised models with Confirmatory Factor Analysis (CFA). The first model was Pittam et al.'s six-factor model of all 18 SAQ items. The second was a two-factor model of higher-order factors suggested in Pittam et al.'s original article; the first factor of this model consisted of the three authorial identity factors (i.e., confidence in writing, understanding authorship and knowledge to avoid plagiarism) and the second factor included three approaches to writing factors (i.e., top-down, bottom-up and pragmatic approaches to writing). The third model fitted to the data included one latent factor underlying all 18 items

of the SAQ. Finally, the last model tested was the three-factor model extracted with PCA by Ballantine et al. These results indicated that the three-factor model fit Ballantine et al.'s data better that any of the other theorised models.

These findings suggest a factor structure different from Pittam et al.'s (2009) as a model of student authorial identity (see Figure 7); however, these should be interpreted with caution as there are some psychometric issues regarding the analyses. Firstly, Ballantine et al.'s confirmatory analysis fitted models to the same data that was used for exploratory analysis, so it is unsurprising that the results of the PCA and CFA converge when both analyses were conducted on the same data. Secondly, the best fitting model only included 12 items from the original 18 items in Pittam et al.'s SAQ. This meant that there were substantially fewer degrees of freedom for Ballantine et al.'s three-factor model compared to the three other models that were analysed. This is an important consideration to take into account as the exact fit χ^2 is particularly sensitive to degrees of freedom (Bentler, 1990). Although it is possible to correct this by calculating normed χ^2 statistics from Ballantine et al.'s reported results, it is not possible to obtain significance values for their χ^2 tests, which have been omitted from their reporting. This oversight is common and lack of detail in reporting has been described as a major problem in CFA based research (Jackson, Gillaspy Jr & Purc-Stephenson, 2009). In addition, Jackson et al. have suggested that articles reporting CFA research should include an account of the procedures used for dealing with missing data and measures of multivariate normality, both of which are missing from Ballantine et al.'s paper.

Aside from the issues associated with Ballantine et al.'s (2013) CFA, there a number of psychometric critiques related to the EFA analysis. Firstly, the PCA extraction method used is not actually a form of EFA, even though the authors refer to EFA and PCA interchangeably. Although Goldberg and Velicer (2006) have suggested that the preferred tendency to use PCA over true EFA techniques rarely affects results, Costello and Osborne (2005) argue that PCA is not theoretically compatible with the measurement of psychological constructs, and the practice should be discouraged. Secondly, the number of factors to be retained was selected by interpreting the scree plot following an initial component extraction. Ballantine et al.'s rationale for this procedure was based on Zwick and Velicer's (1982) evaluation of competing methods; in fact Zwick and Velicer (1982; 1986) suggest that factor analysts should use techniques that are more accurate and statistically defensible compared to

Cattell's (1966) scree test. Available recommendations that fulfil these criteria include Velicer's (1976) Minimum Average Partial (MAP) and Horn's (1965) Parallel Analysis (PA).

Figure 7. Ballantine et al.'s (2013) three-factor model of student authorial identity with observed correlations between factors.

Content removed for copyright reasons. The relevant information used to create this model is available in the following publication:

Ballantine, J., Guo, X., & Larres, P. (2013). Psychometric evaluation of the Student Authorship Questionnaire: a confirmatory factor analysis approach. *Studies in Higher Education.* Advance online publication. Doi: 10.1080/03075079.2013.835910

Despite the statistical issues with Ballantine et al.'s (2013) study, it is a more robust attempt to validate the SAQ than Pittam et al.'s (2009) original development study; unfortunately, even disregarding issues of item generation and content validity, they were unable to produce a reliable scale with Cronbach's alphas above .70 for all subscales. The 12 item three-factor scale presented by Ballantine et al. has improved psychometric properties over Pittam et al.'s original, but still does not fit the minimum guidelines for a reliable measure (DeVellis, 2012). There is some evidence for the construct validity of authorial identity from research using the SAQ; in particular that there are significant relationships between authorial identity, and other, related constructs, such as approaches to learning (Kinder & Elander, 2012) and self-efficacy (Maguire et al., 2013). However, other aspects of model validity and reliability have

not been examined, or the SAQ has performed poorly under scrutiny. This suggests that there is a need to develop a more comprehensive model of authorial identity using a robust and systematic approach to scale development.

2.5 Summary

This chapter has focused on three areas of literature relating to authorial identity: the development of authorial identity as a concept in discourse studies, the adaptation of authorial identity as a pedagogic construct for dealing with plagiarism, and the current state of the psychological model of authorial identity. The review of discourse based research in the first section highlighted the complexities of understanding authorial identity in students, but also offered insights into the contribution that psychological research could make to this area. The second section gave an overview of recent attempts to develop authorial identity as a pedagogic approach and the limitations of these studies. Finally, the third section presented the problems associated with the current psychological model of authorial identity, and the need to develop a robust model to support further pedagogical work. These sections form a comprehensive review of the literature on authorial identity in the context of student academic writing; however, there is one other observation relevant to the research presented here.

Every piece of research in this review has focused on student perspectives of authorial identity and writer identity; there is no literature available that specifically examines the way in which professional academics understand these concepts when assessing student work. This is somewhat surprising and represents a significant gap in the literature. Researchers looking at plagiarism, assessment and feedback, have explored the perspective of academics in these other aspects of writing (e.g., Wilkinson, 2009; Norton, Norton & Sadler, 2012), but the perspective of academics has not been examined with regard to authorial identity. As tutors who should improve authorial identity, assessors that reward authorial identity and accusers when there are incidences of plagiarism, academics' understandings of authorial identity need to be included in the development of the authorial identity approach. The current thesis addresses this issue by including academic staff's understandings in the systematic development of a model of authorial identity. An outline of the methods used to achieve this are presented in the following chapter.

Chapter 3: Methodological Issues

3.1 Overview

The previous chapters have reviewed the key literature on authorial identity, and presented the overarching rationale for the research presented in this thesis. The current chapter outlines the methodological issues associated with the studies conducted. This includes the philosophical underpinnings of the sequential mixed methods approach that was taken (Creswell, 2009). In addition, an overview of data collection strategies and analysis techniques for all three studies is presented. This is split into two sections: the first deals with the qualitative methods used in study one and the item generation part of study two; the second is concerned with the quantitative approaches used in the main part of study two and study three.

3.2 Philosophical Perspectives

Behavioural researchers are often accused of neglecting the hidden assumptions associated with their research (Slife & Williams, 1995), so it is important to outline the influence of epistemological positions in relation to psychological research. The three studies presented here aimed to identify the mechanisms underlying authorial identity. A critical realist perspective (Archer, Bhaskar, Collier, Lawson & Norrie, 1998; Corson, 1991; Potter, 2000) was adopted to examine authorial identity as a psychological construct shaped by the epistemology of stakeholders in relevant contexts. Due to the applied context that this research is concerned with (i.e., pedagogic practice in higher education), the research was also informed by a pragmatic worldview (Morgan, 2007) that ensured research findings could be applied to practice. The issues explored by this research are applicable to the higher education sector in the UK and beyond, which includes a large number of students, academics and institutions. To inform pedagogy and ensure that findings could be applied to as many practicing contexts as possible, generalizability and representativeness were taken into account. An outline of the philosophical perspectives and their influence on the current research are included below.

Critical realism

On the traditional continuum of research philosophies, which has positivism at one end and social constructivism at the other, critical realism is positioned midway between the two extremes (Archer et al., 1998). This position includes a realist ontology about the world that differentiates between the stable dimension of reality and the changeable dimension of knowledge about this world (Sayer, 2008). The stable world exists independently of

perceptions and theories relating to this reality. However, theories of knowledge about this world are considered changeable and socially dependent. Therefore, critical realist research employs a relativist epistemology that acknowledges the constructed nature of knowledge about reality. Research informed by this epistemology seeks to identify the social structures that underlie psychological phenomena identified by observation (Braun & Clarke, 2006). In particular, these positions informed the interpretation of integrative themes in study one.

Critical realism accepts epistemic relativism, but rejects judgemental relativism (Sayer, 2000). In contrast to social constructivist positions, critical realism asserts that theories of knowledge based on empirical research can be considered better representations of truth and reality than other forms of knowledge. Recognition that observations about the world are influenced by social context does not mean that they are determined by social context. Observations of the world have some reflection of reality despite the influence of changeable theories of knowledge. Research findings can only represent reality through a lens that is socially constrained, but the findings give us valuable insights about reality despite this. As a result, this approach does not aim to identify an essentialist representation of authorial identity; instead the intention is to identify shared understandings of authorial identity, because of the subjective phenomenological nature of authorial identity as a psychological construct.

Although a relativist position cautions against generalising from research, this thesis presents findings alongside a detailed account of contextual issues; generalisations are suitable only to similar contexts. Moreover, the model of authorial identity identified in this research is recognised as dependent on social factors relating to students and the wider academic environment. This model provides a useful framework due to the similar structures that commonly exist in higher education teaching contexts.

The Pragmatic worldview

Authorial identity as a psychological construct was operationalised to inform pedagogical practice and policy (Pittam et al., 2009). In addition to a critical realist position, a pragmatic worldview (Creswell, 2009; Morgan, 2007) was adopted when designing the studies. Although the current research also aimed to develop theories of authorial identity, and to support its use in pedagogy, the approach to study design was also guided by psychological and psychometric theory. This robust theoretical approach ensured that application of the

findings would have a sound theoretical basis that was defensible in the context of these research traditions.

Pragmatism is an ontological perspective that prioritises the application of research to practical problems (Patton, 1990). Creswell (2009) suggests that pragmatism is particularly suited to informing mixed-methods research because it focuses on the phenomenon and emphasises that researchers should use all available methodological approaches to understand the research question. Pragmatism is not explicitly associated with one system of philosophy (Creswell, 2009), but inspection of underlying pragmatist principles show that it is compatible with, and in some ways very similar to, critical realism. For example, pragmatists subscribe to a dichotomous conceptualisation of reality; this consists of an external world independent of the mind as well as one lodged in the mind (Cherryholmes, 1992). These can be seen as analogous to the stable and changeable dimensions of reality that underpin critical realism (Sayer, 2008). Moreover, pragmatist researchers argue that research should not just ask questions about reality and the laws of nature, because research is always conducted in social, historical and political contexts (Rorty, 1983); this echoes the critical realist stance of epistemic relativism.

A pragmatic worldview informed the nomothetic approach to study design; ensuring that findings would have practical relevance and generalizability. In particular, these concerns influenced studies two and three, as development of a measurement tool had specific practical and pedagogic applications. For example, it was important for the findings from these studies to be theoretically and statistically robust, but the resultant items were also intended to serve as a reliable measure of authorial identity. In psychometric theory it is generally accepted that the greater the number of valid items in a test the better the test's reliability (Mellenbergh, 2011). However, longer tests can be impractical and difficult to administer; acknowledgement of the pragmatic worldview ensured that the resultant scale was a suitable length for use in further research and pedagogy.

3.3 Research Aim and Objectives

Aim:

- To develop a psychological theory of authorial identity and inform authorial identity approaches to plagiarism.

Objectives:

- To explore professional academics' understandings of authorial identity.
- To identify latent variables underlying student attitudes and beliefs about authorship.
- To examine the fit of hypothesised models of authorial identity to student attitudes and beliefs about authorship.
- To develop a measure of authorial identity in students and assess its validity and reliability

3.4 Overall Design

The research presented in this thesis is organised into three studies. Although they are reported separately, they were designed as a single programme of research. In order to meet the research aim stated above, a sequential mixed methods approach (Creswell, 2009) was adopted; this allowed findings from previous studies to inform the design of following ones. Specifically, the interviews from study one informed generation of an initial item pool for study two, and the model identified in study two was examined in study three.

The programme of research began with a qualitative study exploring professional academics' understandings of authorial identity. The second study identified a model of latent variables that underlie student authorial identity. The final study tested this model on another sample of student data to examine the degree of fit for this hypothesised model. In addition, the results from studies two and three combined to develop a measure of authorial identity and provide evidence about its validity and reliability.

3.5 Ethical Issues

Ethical approval was granted by the University of Derby's Psychology Research Ethics Committee for all of the studies presented in the current thesis, and for focus groups conducted as part of item generation for study two (Appendices 1, 2 and 3). In addition, the principles of the British Psychological Society's (BPS) code of ethics and conduct (BPS,

2009) were adhered to whilst conducting the current research. In particular, the guidelines set out regarding research with human participants (BPS, 2010) and internet mediated research (BPS, 2013) were used to guide study design. A number of specific issues relating to research ethics are presented below.

Risk

Although it was not anticipated that the research studies would cause physical harm or psychological distress, risk assessments were conducted to minimise the potential of discomfort that the studies could generate. In particular, plagiarism was identified as a topic with negative connotations that could potentially cause distress; for each study a protocol was designed that would bring the study to a halt in the case of a participant in discomfort. The right to withdraw was emphasised during briefings, and the researcher was prepared to halt qualitative data collection if a participant was judged to be upset by the discussion. Although it was not possible to judge whether individuals completing online questionnaires were at risk of harm, the effects of responding to questionnaire packs was monitored in participants completing paper surveys; this indicated that the items included in the questionnaire studies did not induce psychological distress. Participants were also offered the right to withdraw up to four weeks after taking part in the studies and researcher contact details were provided as part of the debriefs for studies. Although these safeguards were put into place, none of the data collection procedures had to be halted for ethical reasons, and none of the participants contacted the researcher to withdraw data.

Informed consent

All participants were provided with briefing materials that included an outline of the aims and objectives of the research. In addition, face to face data collection included a verbal briefing and the opportunity to ask questions of the researcher. For online data collection methods, contact details of the researcher were provided with the briefing materials, and prospective participants were invited to ask questions by email before deciding whether or not to participate. All studies included a consent form that required participants to tick a box indicating that they had read the briefing materials and agreed to take part; this was done to ensure that participants were giving informed consent to take part in the study. For one of the studies, renewed consent was obtained at the point of retest and it was emphasised that participants had the right to withdraw from the retest, even if they had completed the first

phase of the study. In addition, consent was sought from heads of academic departments when recruiting academic staff for the interview study.

Confidentiality

All research data was treated confidentially and findings are reported anonymously. Digital data, such as audio recordings and online survey responses, were transferred to password protected University of Derby servers and deleted from any portable devices at the first available instance; this was normally within 2 hours of data collection and always within 12 hours. All data was anonymised and pseudonyms were assigned for qualitative data transcription. No identifying information was stored digitally with datasets; in instances where students provided consent to access grade data, student numbers were only used to input grade information and the numbers themselves were not entered into datasets. Physical data, such as transcripts and paper surveys, were stored in locked filing cabinets in a secure office at the University of Derby. In addition, consent forms with identifying information were stored in a separate locked unit that was only to be accessed if there was a request to withdraw data. Members of the research supervision package were also briefed about the confidentiality of data; in instances where they had access to data (e.g., for auditing purposes), they made arrangements to store the data securely in locked units. One anonymised interview transcript was sent by email to the respective participant on request, who was informed of the data protection procedures that had been followed. As the data referred only to the recipient of this email, he was free to use this transcript for his own purposes. It should also be noted that focus groups were conducted as part of item generation; whilst the same ethical procedures were followed by the researcher, confidentiality could not be ensured from fellow focus group members. However, all participants in these focus groups were briefed and instructed to maintain confidentiality.

Giving advice

No advice about plagiarism or authorial identity was given in the research context and quantitative scores were not computed individually at any point. In addition, the researcher did not use any of the research to 'diagnose' issues with plagiarism or authorial identity. However, it should be noted that the researcher was an associate lecturer at one of the institutions where participants were recruited. In some instances, students referred to their participation in the research during later conversations and sought advice about authorial identity. In these situations, giving advice on these topics was seen as part of the researcher's

educational and academic role; however, at no point did the researcher refer to specific data that had been collected as part of the studies.

Deception and debriefing

Deception was not used in any part of the studies and all participants were debriefed with information and materials. In addition, all participants were given the opportunity to ask questions about the research at any stage by phone or email. It was emphasised that contact details were not just in case of withdrawal, but also for enquiries about the research. A number of participants have requested to be contacted on completion of the studies and it is anticipated that they will be sent a copy of the current thesis or resulting publications.

3.6 Qualitative Methods

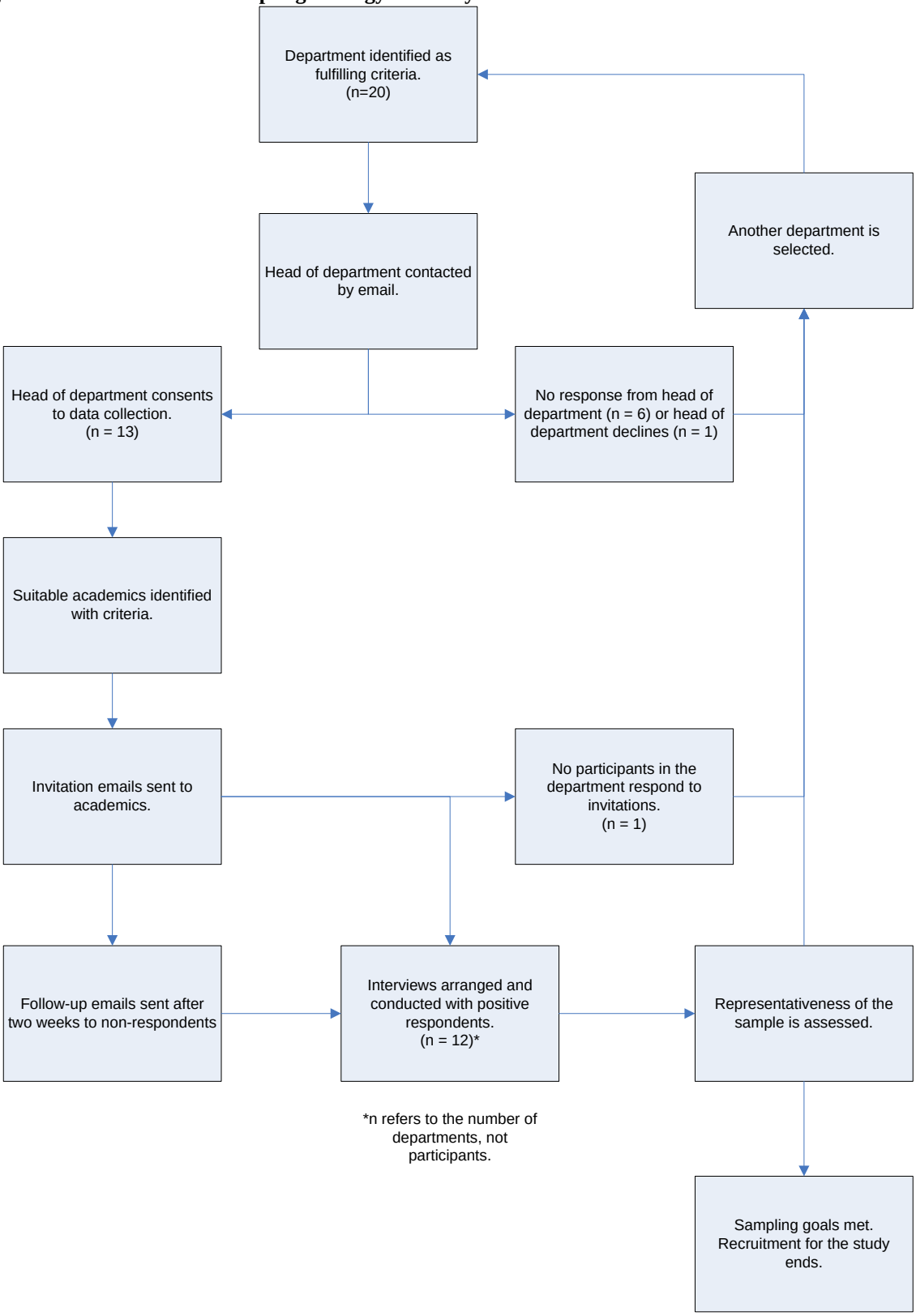
Study one used qualitative methods to explore academics' understandings of authorial identity. An overview of the sampling strategy, data collection techniques and approach to analysis are presented in this section. In addition, a description of the qualitative approach to item generation for study two is presented.

3.6.1 Sampling Strategy

There are a number of options available when sampling for mixed methods research. Study one used a purposive typical case technique that aimed to achieve representativeness (Teddlie & Yu, 2007). This sampling strategy sought to include professional academics from UK universities who had experience of assessing undergraduate academic writing. In addition, recruitment favoured a heterogeneous sample in relation to gender, age, level of teaching experience and subject. In order to achieve these recruitment goals the strategy targeted participants at two levels: departmental and individual. A diagram outlining this strategy is shown in Figure 8.

Suitable academic departments were identified using university websites. Due to the range of terminology used by institutions, it is necessary to clarify use of the term department. In this context, department refers to subject-specific organisational groups responsible for teaching one or more higher education programmes. In hierarchical structures, these departments were typically located within 'Schools' that were subsumed within 'Faculties'. Although titles varied between institutions (e.g., section, division, department), they are all referred to as departments within this sampling framework.

Figure 8. Flow chart of the sampling strategy for study one.



As the research presented in study one explores a construct relevant to more academics than could be included, representativeness was an issue to consider when sampling. Generalisations based on small-scale qualitative research are limited, but Willig (2013) argues that identifying an experience with research suggests that it is available within the constraints of that culture and society. This allows qualitative findings to be cautiously generalised, as long as the sample is representative of the population under investigation. To ensure that they represented typical examples of UK teaching, a number of inclusion and exclusion criteria were used when selecting departments to contact; these criteria are listed below.

Departmental inclusion criteria

- The department delivered at least one undergraduate level programme across three or more years.
- The department included five or more members of staff employed primarily as higher education teachers (e.g., lecturers, senior lecturers, teaching fellows).
- The largest undergraduate programme administered by the department had a cohort of 30 or more students.
- The department was associated with one or more of the Higher Education Academy's (HEA) 36 subject networks (HEA, 2013).
- The department was located in the UK, as part of a UK based publicly-funded higher education institution.

Departmental exclusion criteria

- The parent institution of the department was based outside of the UK.
- The parent institution was privately funded.
- The parent institution did not have degree awarding powers.
- The department was too small in size (indicated by members of staff and cohort sizes).
- The department was formed within the two years prior to the study taking place.
- The department did not deliver any undergraduate level courses conferring bachelor's degrees.
- The department's areas of academic interest did not fall within any of the HEA's subject centres (HEA, 2013).

Before recruiting from a department, the consent of the head of department was sought. This ensured that managers were aware of the study and reassured that institutions would not be identified in reports of the findings. Once consent was obtained, suitable participants were identified using pre-determined inclusion and exclusion criteria relevant at the individual level; these are outlined alongside details of the sample for study one in chapter four.

3.6.2 Data Collection

Conceptualising authorial identity as part of higher education is relatively novel and discussions relating to this topic are unlikely to be present in naturally occurring data. Qualitative research data can be collected using a number of purposeful methods. Willig (2013) suggests that the data collection technique, research question and data analysis method are interdependent. Academics discussing plagiarism and higher education practices can potentially be critical of students, colleagues and institutional policies. Focus groups were ruled out so that participants could speak freely about these topics.

In-depth interviews have a long history within social science research, stemming from their popularisation by the Chicago School sociologists as part of their ethnographic methods (DiCicco-Bloom & Crabtree, 2006). Originally rooted in a phenomenological tradition, interviews are now used extensively in psychological research as they allow in-depth exploration of specific topics (Willig, 2013). Structured, semi-structured and unstructured interviews are available to qualitative researchers. The restrictions imposed by strictly structured interviews made them unsuitable due to the exploratory nature of the research aims. Semi-structured interviews were considered more suitable for data collection in study one, as they allow all study participants to be asked the same questions, but with flexibility to explore unanticipated topics in more depth (Dearnley, 2005).

Interview Schedule

Semi-structured interviews use a pre-arranged interview schedule to inform data collection; it is not necessary for the interviewer to follow this schedule rigidly, but it does provide a structure to ensure that similar topics are covered across all participants. An initial interview schedule was developed from the literature on authorial identity and plagiarism (e.g., Abasi et al., 2006; Pittam et al., 2009; Elander et al., 2010). Questions for this schedule were designed to elicit open-ended answers with explanations; this enabled participants to give responses in

their own words. In addition, suitable prompts for each question were identified in advance, so the researcher could seek clarification using a standard method of probing the issue further. Two pilot interviews were conducted with academics using this initial schedule; these were not recorded and are not included in the main study. These pilots were used to refine the questions and interview technique; the wording, length and content of the final interview schedule were modified before use with participants in the main study. The schedule developed using this process is included alongside the analysis in chapter four.

Data Preparation

The interviews were digitally recorded and transcribed verbatim in preparation for analysis. This facilitated the researcher's familiarisation with the data, which is the first phase of thematic analysis described by Braun and Clarke (2006). In the first instance, paper transcripts were used to generate initial codes; this allowed for extended coding sessions that would not have been possible using a computer monitor. In addition, the use of paper transcripts increased the portability of materials enabling transcripts to be passed to supervisors for credibility checks (see section 3.6.5 for further details).

Transcripts were also imported into qualitative data management software in preparation for further analysis. NVivo is a package for managing large qualitative datasets (Leech & Onwuegbuzie, 2008). Compared to exclusively using paper transcripts, use of NVivo has significant practical benefits. Firstly, the entire project is self-contained, so that all transcripts, codes and notes are available to the researcher at once. Secondly, cross-referencing between transcripts is facilitated by a database so that all codes across multiple transcripts can be viewed together. Finally, editing codes, themes and the associated hierarchical structure is user-friendly, allowing the analysis to easily move back and forth between phases; the constant revision required would involve extensive editing of handwritten notes on paper transcripts.

During the third phase of analysis, all of the codes generated on paper were transferred to the NVivo system. Analysis continued using the software package and credibility checks were conducted using reports of coding generated by NVivo.

3.6.3 Analysis

A number of analytic methods are available for use in psychological research (Willig, 2013). One family of these are described as thematic approaches by Boyatzis (1998), characterised by a focus on identifying recurring patterns of meaning within datasets; this group includes established methods such as Interpretative Phenomenological Analysis (IPA) and grounded theory. However, Braun and Clarke (2006) have argued that thematic analysis is a psychological research method in its own right; in their seminal paper, they codified an analytical procedure with six phases. More recently, researchers from other disciplines have published guidance for using a similar method labelled as Applied Thematic Analysis (e.g., Guest, MacQueen, & Namey, 2013). The qualitative analysis used in the current research closely follows the step-by-step protocol laid out by Braun and Clarke (see Table 3), as this provided the most rigorous methodological framework. From this point onwards, thematic analysis refers to Braun and Clarke's method rather than the group of methods referred to by Boyatzis.

Table 3. Phases of thematic analysis (Braun & Clarke, 2006).

Content removed for copyright reasons. The relevant table is available in the following publication:

Braun, W., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101.

Thematic analysis is a method widely used in psychology that provides a systematic framework for conducting qualitative analysis without tying the researcher to an epistemological position (Braun & Clarke, 2006). The result of a thematic analysis can summarise the salient features of a large data corpus in an accessible format without compromising the depth of the analysis. Study one was conducted to explore authorial identity and further inform higher education policy relating to the concept. Previous research examining authorial identity (Pittam et al., 2009; Elander et al., 2010) has also utilised

thematic analysis to analyse qualitative data and inform pedagogy. The accessibility of thematic analysis reports makes it particularly useful for informing policies in applied settings (Braun & Clarke, 2006) and the method has been used in other educational contexts (Griffin & Pollak, 2009). In addition, thematic analysis is concerned with identifying recurring patterns of meaning as themes in a dataset, making it compatible with the nomothetic aims of the study.

In contrast to other qualitative methods that focus on subjective aspects of an individual's experience, such as Interpretative Phenomenological Analysis (IPA) (Smith, Flowers & Larkin, 2009), thematic analysis allows the researcher to focus on overarching themes and patterns in a larger data corpus than typically used with IPA. This made thematic analysis suitable for identifying how collective groups (e.g., academics) held shared conceptions of authorial identity. As the aim was to interpret and accurately represent these conceptions, thematic analysis (Braun & Clarke, 2006) was preferred over an approach that explicitly focused on developing an explanatory theory of the phenomenon, such as grounded theory (Glaser & Strauss, 1967).

In thematic analysis, codes identify portions of the data that are of interest to the researcher and represent basic units of meaningful information (Boyatzis, 1998); selecting text for coding can be done using an *a priori* template or using a data-driven approach. These are referred to as deductive or inductive coding procedures; thematic analysis is compatible with both methods of generating initial codes, and the approach adopted should be guided by the research aims (Braun & Clarke, 2006). Study one aimed to explore understandings of authorial identity and the literature was too limited to provide an *a priori* framework for deductive analysis. In particular, a coding framework based on previous authorial identity research (e.g., Pittam et al., 2009; Elander et al., 2010; Ballantine & Larres, 2012) would rely heavily on student understandings of authorial identity, which were expected to be considerably different to the perspective of professional academics. The subjective phenomenological nature of academics' understandings of authorial identity made it a suitable subject for inductive coding as this accounted for unanticipated themes and possible variation in academics' attitudes.

Unlike other qualitative methods that are restricted to examining particular discursive aspects of the data, such as discursive psychology (Potter & Wetherell, 1987), thematic analysis is

flexible enough to focus on a semantic or latent level (Braun & Clarke, 2006). This was most relevant at phases three and four of the analysis, as the level of analysis affects the way that codes are grouped into themes. At the semantic level codes are treated at face value without looking for deeper meaning beyond the statements present in the data, whereas latent level, or interpretative level, analysis attempts to identify the ideas and ideologies that underlie the content of the data (Boyatzis, 1998). Latent level analysis utilises *a priori* theories and assumptions to aid interpretation of the data that is actually articulated by participants. A psychological theory about the way that academics understand authorial identity has not been previously identified. Analysis at a latent level would have to be heavily reliant on the assumptions of the researcher, who would not have the benefit of previous research to inform their interpretations; therefore, analysis at the semantic level was adopted for study one.

Interpretation of codes was restricted to what was explicitly stated in coded data extracts; however, semantic level analysis is not merely a description of patterns in the data - interpretation is used to theorise about the significance of themes (Braun & Clarke, 2006). This was relevant throughout phases four, five and six, as themes were revised and re-evaluated in relation to a hierarchical structure. It is important to note that the six phases of thematic analysis are not intended to describe a linear process from start to finish. A qualitative researcher moves freely back and forth between the phases outlined in any analytical protocol, developing the analysis over time (Ely, Vinz, Downing & Anzul, 1997). The thematic analysis in study one followed a recursive process that moved between phases on multiple occasions; in particular, analysis moved through phases four, five and six, changing and revising the thematic structure through different iterations until it reached the coherent form reported in chapter four.

3.6.4 Assessing Validity and Quality

The transcripts were passed to the director of studies at the start of the analytic process. Codes were also presented to the director of studies during the early stages of analysis. Elliot, Fischer and Rennie (1999) have suggested enlisting another researcher to act as an auditor of the analysis. They describe this as a credibility check that ensures interpretative elements of the analysis are valid. Following an initial discussion of the data, regular supervision sessions were used as mini-audits of the analysis. This process has been recommended for use with other forms of qualitative analysis, such as IPA (Smith et al., 2009). In addition, a third

researcher and supervisor (Dr. Michael Flay) audited the thematic structure once the analysis was complete; this was done by examining the report in conjunction with data transcripts.

A number of frameworks have been suggested for appraising the validity and quality of qualitative psychological research, mainly from the perspective of health psychology (e.g., Dixon-Woods, Shaw, Agarwal & Smith, 2004; Walsh & Downe, 2006; Meyrick, 2006). Yardley's (2000) original framework has been particularly influential in this area and an updated version has been published as a book chapter; Yardley's (2008) criteria are 'sensitivity to context', 'rigour', 'transparency', 'coherence', and 'impact and importance'.

This study was designed to investigate a specific context; consideration of the particular issues currently facing higher education were taken into account when developing the interview schedule and sampling strategy. In particular, they were sensitive to concerns about higher education funding and the widening participation agenda that are at the forefront of UK policy at this time.

With regards to rigour, the research was conducted using an established technique that has a well-defined protocol available in the psychological literature. Analysis closely followed the systematic phases outlined by Braun and Clarke (2006) and was evaluated in relation to their 15-point checklist for good thematic analysis (Table 4). In addition, the sampling strategy followed a systematic process with well-defined inclusion and exclusion criteria.

The qualitative methodology in the current section has been reported in detail and it has included explicit articulation of the issues considered during study design, data collection and analysis. This level of detail is also a feature of chapter four, where the study is fully reported. Stipulation of these details and the epistemological positions informing the research ensure that the findings are presented with transparency, allowing the research to be fully evaluated.

All aspects of this study were designed with consideration of the research aim and question. In addition, alternative research methods were considered at each stage; this ensured that the study was coherent with regards to sampling, data collection, analysis, and purpose. A pragmatic worldview (Morgan, 2007) informed a sampling strategy that accounted for

generalisability and representativeness. These measures were taken to maximise the impact and importance of this research on pedagogic practice and policy.

Braun and Clarke (2006) include a 15-point checklist as part of their instructional article on thematic analysis (see Table 4). This set of guidelines was followed when conducting the study and analysis. Following completion of the thematic analysis, the study was evaluated with regards to this framework. The current methodological chapter, the rigorous analysis process, and the report in chapter four combine to positively address all of the issues included in Braun and Clarke's checklist.

Table 4. Braun & Clarke's (2006) 15-point checklist of criteria for good thematic analysis

Content removed for copyright reasons. The relevant table is available in the following publication:

Braun, W., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101.

3.6.5 Item Generation

The second study used quantitative methods to identify the latent variables underlying student authorial identity. However, the item pool for this study was generated using a qualitative method to include a wide range of statements as possible indicators of authorial identity. Item generation came from three sources; the interviews from study one, focus groups with students and the literature on authorial identity (e.g., Elander et al., 2010; Pittam et al., 2009). The interview recordings from study one were used to identify student characteristics that

academics understood as relevant to authorial identity. In addition, five focus groups discussing authorial identity with students were arranged; four were conducted and one became an interview, because only one student participant attended. Three focus groups were recorded with psychology students (n=10) and one with history students (n=3); the interview was recorded with a history student. The focus groups were intended to include a multidisciplinary sample, but only psychology and history students were successfully recruited.

The statement pool started with statements selected from previous research (Pittam et al., 2009; Elander et al., 2010). Audio recordings of the interviews and focus groups were listened to by the researcher; qualities discussed as relevant to authorial identity in students were noted down. These were rephrased as statements that could be agreed or disagreed with and then added to the prospective statement pool. At this stage, no interpretative judgements were made about the validity of statements; all of those considered relevant to authorial identity by academics and students were included for evaluation of content validity. This approach ensured that the subjective understandings of authorial identity held by students and academics were not simply dismissed.

3.6.6 Summary of Qualitative Methodology

This section has outlined the qualitative methods used in study one alongside rationales for their selection. The data collection method, research aim and analysis technique were considered together to ensure that the study had coherence (Yardley, 2008). Thematic analysis was outlined along with key decisions relating to the generation of codes and development of the thematic structure. In addition, an overview of established criteria for assessing validity and quality in qualitative research has been included (e.g., Elliot et al., 1999; Yardley, 2000). The mechanisms used to continuously evaluate the study have been outlined and the methods have been contextualised with Braun and Clarke's (2006) checklist for a good thematic analysis. The following section presents the methodological issues relating to quantitative parts of this research.

3.7 Quantitative Methods

Quantitative methods were used in studies two and three for developing a latent variable model of authorial identity in students. These studies also aimed to develop a measurement tool for examining authorial identity in students; as a result they were informed by the field of

psychometric scale development. Psychometric theory was used to guide these studies (e.g., Furr, 2011; DeVellis, 2012), so an overview of this topic's influence has been included, but the discussion of mathematical concepts and use of algebra has been kept to a minimum. For technical details relating to these procedures, the reader is referred to resources that informed the current methodology (e.g. DeVellis, 2012; Comrey & Lee, 1992; Tabachnick & Fidell, 2007; Goldberg & Velicer, 2006). Sampling and data collection considerations for these procedures are also outlined in the current section. In addition, a number of statistical techniques used as part of this process are presented alongside rationales for their use in the current research.

3.7.1 Sampling and Sample Size

Commonly used scale development procedures apply statistical techniques to identify the latent structures underlying responses to a large pool of items (DeVellis, 2012); these techniques analyse the inter-correlations between item scores and they are based on psychometric theories concerned with measurement error, validity and reliability (Lord & Novick, 1968). As some of these techniques are exploratory in nature, such as Exploratory Factor Analysis (EFA), power calculations cannot be used to estimate recommended sample sizes as they are with inferential statistics. Instead, guidance from psychometric theorists is used to determine minimum sample sizes, although it is generally acknowledged that larger samples are more suitable for factor analysis (Tabachnick & Fidell, 2007).

Comrey and Lee (1992) state that the reliability of correlations increase with the number of observations, and outline a rough guide to evaluating the adequacy of sample sizes: 50 is regarded as very poor; 100 as poor; 200 as fair; 300 as good; 500 as very good; and 1000 or more as excellent. Other psychometricians have suggested using a ratio of participants to the number of variables being analysed; these have variously suggested minimums of five to one (Bryant & Yarnold, 1995), ten to one (Nunnally, 1978) and twenty to one (Hair, Anderson, Tatham & Black, 1995). However, when a scale is developed to measure a relatively unexamined construct, it is common practice to reduce the number of items down from a large item-pool. As this was the case in the current studies, the number of items to be analysed could not be determined before data collection. Tabachnick and Fidell (2007) also suggest that a minimum sample size of 300 should be used as a general rule of thumb when conducting factor analysis. For the current studies, two recruitment strategies were employed to achieve representativeness of the population under investigation; this population was

operationally defined as higher education students studying at undergraduate and master's level at UK institutions. Recruitment strategies used pre-determined inclusion and exclusion criteria; these criteria and details of the sample are included in chapters five and six. In line with recommendations regarding sample size, these strategies sought to recruit large samples with a minimum of 300 participants, to improve the reliability of statistical analyses.

3.7.2 Data Collection

The quantitative studies in the current thesis used paper and online questionnaires to collect data and develop a psychometric measure. Survey and questionnaire studies allow researchers to collect responses from large sample sizes and achieve greater statistical power than they could by using other methods (Fowler Jr., 2009). Although questionnaire designs are a common social science research paradigm, their use should be carefully considered when conducting research (Creswell, 2009).

Questionnaire studies

Conducting research with questionnaires is common in psychology. Pedagogic psychologists have used them to examine writing processes (Norton, 1990; Lavelle & Zuercher, 2001), plagiarism (Marsden, Carroll & Neill, 2005; McCabe et al., 2001) and authorial identity (Ballantine & Larres, 2012; Elander et al., 2010; Maguire et al., 2013; Pittam et al., 2009). As the current research sought to explore authorial identity and develop generalisable findings, the use of questionnaires was appropriate. However, questionnaire research is often seen as an easy way to collect data and the method has been subject to criticism (Boynton, 2004). Therefore, it is necessary to consider some of the issues related to questionnaire-based data collection.

It is important to have a clear research question when conducting questionnaire studies (Kelley, Clark, Brown & Sitzia, 2003). This allows selection of a suitable sample and measure for conducting the study. Each study in the current thesis had clearly defined aims that informed sampling strategies and the measures that were used. Measures were only selected once the research aims and sampling strategy had been decided upon. Decisions to include particular measures were based on their reported psychometric properties, validation on suitable samples, and a face validity check of the items. This ensured that measures were reliable, valid, and did not include any threatening or leading questions.

Standardisation of the response environment was also considered in the design of studies. It is recommended that psychometric researchers take reasonable steps to control the environment and ensure that responses are comparable across individuals (Mellenbergh, 2011; DeVellis, 2012). Paper-based respondents completed questionnaires in lecture rooms in the presence of the researcher. Although this was not possible for online respondents, briefing materials instructed participants to ensure that they had time in a calm and stable environment before starting the study.

Internet mediated research

Concerns have been raised about conducting research using online surveys. In particular, various commentators have suggested that internet-based questionnaire studies are unsuitable for psychological research because they access a narrow demographic sample (Azar, 2000); are adversely affected by anonymity (Buchanan, 2000); are incompatible with traditional methods (Krantz & Dala, 2000); and that the likelihood of recording non-serious responses is increased (Buchanan, 2000). These issues were considered in relation to the current research and procedures were employed to minimise these concerns.

As the current research investigated the population of UK higher education students, an internet sample was unlikely to have any effect on the representativeness of the sample; this is because undergraduate students should have access to internet resources and make regular use of these as part of their studies. With regards to anonymity and the potential problem of repeat respondents (Buchanan, 2000), unique identifier codes were used to identify participants in case of withdrawal; these were also used to identify repeat respondents that may have adversely affected data collection. Data-screening was used to test for statistically significant differences between the online data and paper-based data; this ensured that the two methods of data collection were compatible. The final issue of non-serious or unmotivated respondents was a serious concern; however, screening for multivariate outliers only identified one participant who had responded in an arbitrary pattern, and this individual completed a paper-based questionnaire. This suggests that traditional research methods are as susceptible to these issues as internet-based research.

The precautionary measures taken as part of study design ensured that the online survey methods did not adversely affect the findings. In addition, research has shown that online methods recruit favourably diverse samples for psychological research (Buchanan & Smith,

1999; Gosling, Vazire, Srivastava & John, 2004), suggesting that many of these concerns do not influence research in well-designed studies. In addition, the BPS's ethical guidelines for conducting internet mediated research (BPS, 2013) informed the recruitment strategies employed, ensuring that the use of online surveys followed principles set out by the BPS.

3.7.3 Psychological Measurement

Measurement theorists have developed a variety of methods, and recommend a number of procedures for developing reliable and valid measures of psychological constructs (Goldberg & Velicer, 2006). However, some psychometricians disagree on some of the key points related to the use of specific techniques, such as the use of principal components analysis (PCA) versus 'true' factor analysis (FA). This makes it important to consider the theoretical underpinnings of such techniques and the evidence for their use in scale development research. Self-report measures are often used in psychological research to examine psychological constructs (Furr, 2011). Psychometric tests are instruments specifically designed to measure one or more latent attributes in standardized conditions (Mellenbergh, 2011); they are used to conduct research and also in applied settings for diagnosis and evaluation.

Conventions related to the use of psychological testing have developed from a tradition of measurement grounded on Classical Test Theory (CTT) as outlined by Lord and Novick (1968). Although other contemporary models of psychometric measurement exist (such as Item Response Theory), CTT based procedures are the most commonly used in psychology due to their ease of application in statistical software and the theory's compatibility with the factor analysis model (Mellenbergh, 2011). A CTT approach is useful for estimating reliability of items; however, it is important to acknowledge the limitations and assumptions associated with CTT.

Classical Test Theory (CTT)

CTT is a model used in the measurement of constructs through formal testing (Coaley, 2010). Although most commonly associated with the use of self-report measures, Mellenbergh (2011) points out that CTT is also applicable to observation tests, where the instrument is designed to be completed by someone other than the individual being measured; a clinician for example. CTT conceptually defines the way that a test response for any item or set of items should be interpreted; this response is known as an observed score, which can be the

score for a single item, combined items, or an entire test. Novick (1966, pp.1) specifies CTT as the theory that "postulates the existence of a true score, that error scores are uncorrelated with each other and with true scores and that observed, true and error scores are linearly related." This definition specifies that any observed item score is composed of the true score (what the item is designed to measure) and measurement error. Mathematically presented this refers to the premise that for each item:

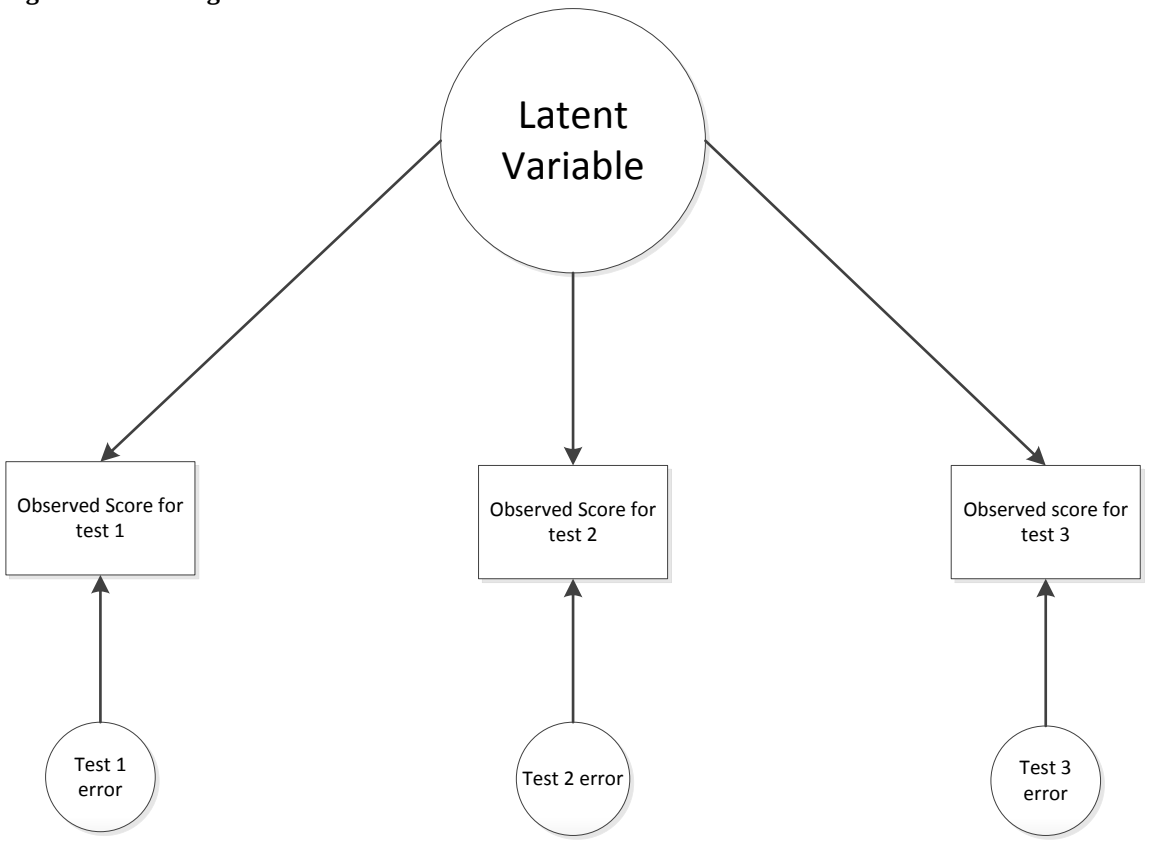
$$X = T + E$$

Where X is the observed score, T is the true score and E is error.

In its strictest form, CTT assumes that error scores are random across items and not correlated with each other, so the error associated with each individual item has a mean of zero across a large sample of responses (DeVellis, 2012). In addition, the errors are not correlated with the observed score, the true score, or the latent variable being measured. The reliability of a test refers to how accurately the observed score on a test reflects the latent true score (Lord & Novick, 1968). By definition, this latent score is unobservable, so reliability can only be estimated using the concept of parallel tests.

Parallel tests are measures of the same true score, resulting in a model of construct measurement that can be presented in a path diagram as Figure 9. Each test is mathematically equivalent to its parallels, in terms of its relationship to the latent variable and the amount of error that is included in the test score. However, having multiple tests that conform to these assumptions would be difficult, if not impossible. In application, CTT estimates of reliability are based on measures of internal consistency derived from a conceptualisation of items as equivalent tests (DeVellis, 2012). This is possible because assumptions of mathematical equivalence can be relaxed when there are three tests and their equivalence can be empirically tested when there are four or more tests (Novick & Lewis, 1967). When applying the parallel test model to four or more tests, the only assumption that must be met is that they all measure the same construct; this is referred to as congeneric equivalence (Lord & Novick, 1968).

Figure 9. Path diagram of the classical test model.



These principles are the basis for classical estimates of reliability, the most common of which is Cronbach's (1951) alpha (α) for internal consistency, but includes techniques that share the same mathematical assumptions, such as the other intra-class correlation coefficients that are outlined in 3.7.4 (DeVellis, 2012).

As a model of psychological measurement, CTT has some limitations when applied to actual test data. One issue arises from the assumption of equal errors across items and respondents. This is unlikely for any test or given testing situation, because the error associated with each item will be different for each respondent (Hambleton, Swaminathan & Rogers, 1991). For example, an intelligence test administered to a specified sample would include multiple items that vary in difficulty. Taking two items from a validated intelligence quotient (IQ) test, we could describe one of them as easy to answer correctly and the other one comparatively difficult. Each of these items has associated error that is not fixed, because the degree of error varies dependent on the ability of the respondent. The easier question will be more useful for discriminating between low and mid IQ, whereas the more difficult question would more

accurately discriminate between those of mid and high ability. In order to meet all of CTT's assumptions, all of the items would have to measure a construct equally and be equally discriminant across each of the individuals in the sample.

Another issue arises from the scoring of tests for classical analysis, which Mellenbergh (2011) describes as measurement by fiat. Psychological tests commonly use Likert scales that are scored along an ordinal scale. For example, for responses to an item, 'strongly disagree' might be scored as a low number and 'strongly agree' as a high number, with other options falling in between. Analysis methods based on CTT treat these responses as points on a continuous scale; conventional practice records each response option as equidistant from the option preceding it and the option following it. This means that the difference between any two neighbouring response options is conceptualised as being the same. In reality, the difference between 'agree' and 'slightly agree' is not always equal in magnitude to the difference between 'slightly agree' and 'neither agree or disagree'. This calls these conventional scoring methods into question as they do not have a theoretically sound justification. Some of these issues are addressed by using maximum likelihood techniques to estimate polychorric correlation coefficients for use with some techniques; this method is used with parallel analysis as part of study two and outlined in 3.7.4.

The theoretical limitations of CTT have led to increasing use of alternative methods within the field of psychometrics (Raykov & Marcoulides, 2011). Structural Equation Modelling (SEM) and Item Response Theory (IRT) methods are recommended by psychometric theorists, but scale development in psychology still tends to use methods based on CTT (Wilson, 2013; Mellenbergh, 2011). This is partly due to the comparative complexity of applying IRT modelling techniques (Hambleton & Jones, 1993) for developing psychological measures. Kline (2000) argues that the theoretical issues with CTT can be countered on the pragmatic grounds that psychometric scale development using CTT is effective at developing applied measures.

In addition, the findings of IRT can be difficult to interpret by an applied audience unfamiliar with mathematical modelling. In line with the pragmatic worldview (Creswell, 2009) that informed study design, CTT based techniques were used to guide scale development, ensuring that the measurement tools could be interpreted by a non-technical audience. However, SEM approaches to validation were adopted using CFA in study three; these

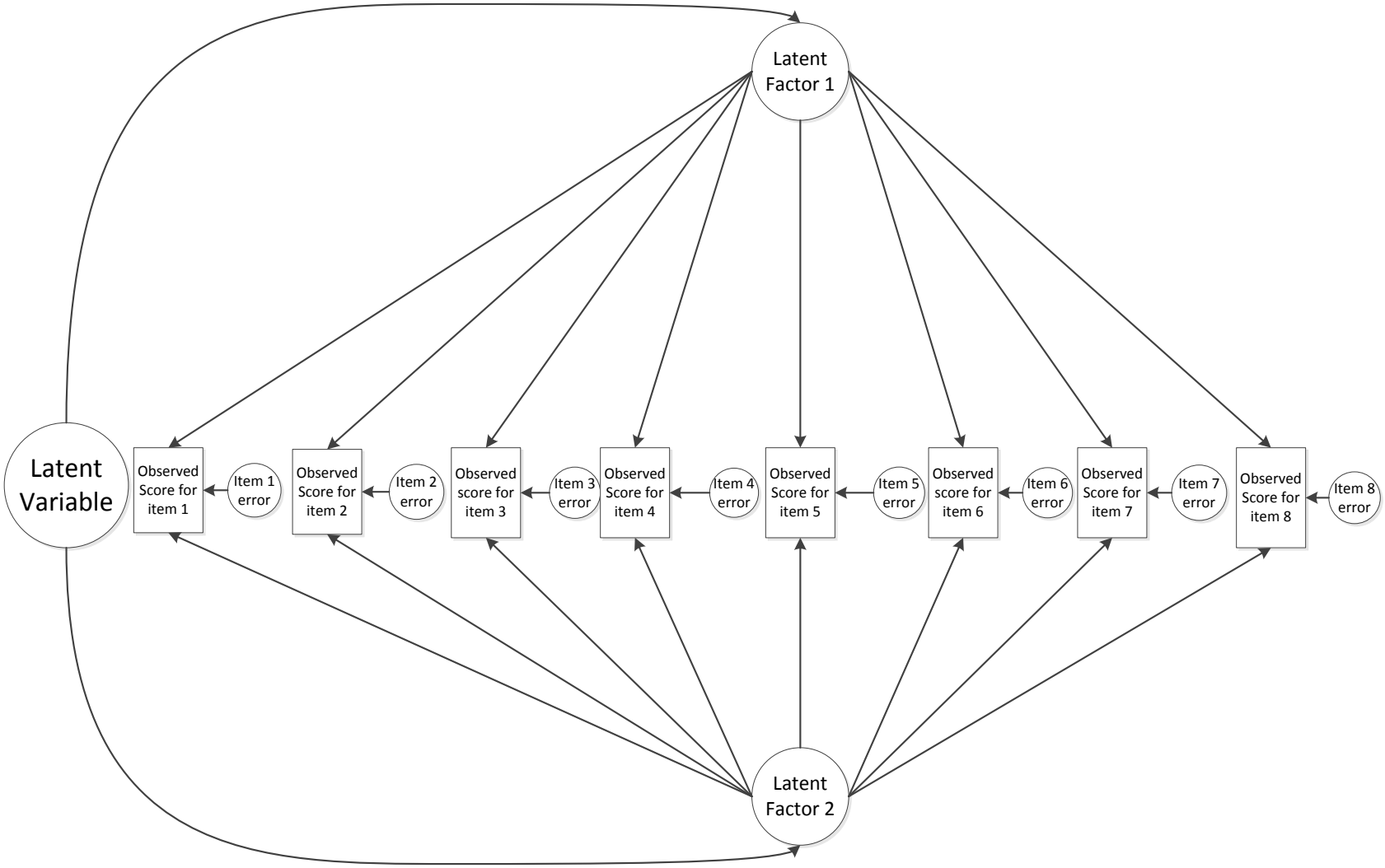
methods are preferred by measurement theorists for evaluating the structure of latent models (Mellenbergh, 2011). In addition, the item pools at each stage are presented alongside the findings from study two; this allows further exploration of the model structure using IRT in further research.

The factor model

The factor model of measurement underlies the use of Exploratory Factor Analysis (EFA) in scale development (Comrey & Lee, 1992). This model is based on the classical test model, but includes the addition of a hierarchical structure. A multi-factor model is investigated when the existence of multiple latent factors is hypothesised to underlie a superordinate latent variable. A hypothetical two factor model is presented in Figure 10. The model consists of a latent construct and k number of factors; in Figure 10, $k = 2$. A factor is a hypothetical latent variable underlying the construct of interest; like the construct itself, it is unobserved and can only be measured by examining its effect on observed responses. The factors are related to each of the observed variables to differing degrees and techniques using this model of measurement aim to identify or test these relationships, by analysing the response patterns in a dataset. These latent factors and their relationships to observable measures can then be interpreted by researchers. However, these interpretations can vary depending on the philosophical perspective of the research and the aim of the research question.

One example that can be used to illustrate this is personality research; this area of psychology has utilised the factor model extensively (Goldberg & Velicer, 2006), and been influential in the widespread adoption of multidimensional models for conceptualising psychological constructs. The five factor model of personality (k=5) is one that has been examined extensively with factor analysis from two traditions (McCrae & John, 1992): the lexical approach (Cattell, 1946) and the administering of questionnaires (Eysenck & Eysenck, 1976).

Figure 10. Path diagram of an example factor model with two factors.



The five factor model has been shown to robustly model responses to personality measures in many studies conducted by personality psychologists (e.g., Tupes & Christal, 1958; Borgatta, 1964; Norman, 1963; Smith, 1967; Goldberg, 1990). In addition, this structure has been shown to underlie personality measured in other cultures, including Dutch, German and Japanese samples (John, 1990). Many personality researchers suggest that this points to the existence of five constructs underlying personalities (Goldberg & Velicer, 2006); this is an essentialist position that suggests reality has a universal truth that researchers can discover. However, other factor models of personality have been popular in the past (e.g., Eysenck, 1992) and there will likely be refined models in the future. In fact, recent meta-analysis of factor analysis studies has suggested that there are two levels of hierarchical factors above the five factor model; with the uppermost factor conceptualised as a general factor of personality (Van der Linden, Niejenhuis & Bakker, 2010). These researchers suggest that their findings, combined with the work of others (e.g., Musek, 2007; Rushton & Irwing, 2008), is evidence that a general factor of personality 'exists'.

Factor models are linked to essentialist ontologies, because they are commonly used to make claims stating the ‘truth’ about reality, but Goldberg and Velicer (2006) have pointed out that factor models can be used to describe data and construct theories, without making claims about causation and reality. Researchers suggesting that factor models provide evidence for the ‘existence’ of latent variables should examine compelling accounts that a general factor of personality exists (Van der Linden et al., 2010), and does not exist (de Vries, 2011). Undoubtedly, one of these models will triumph as the ‘truth’ in due course, but it is more appropriate to consider factor models as useful tools for constructing contextualised theories of knowledge. The use of factor models in studies two and three are not intended to identify an essentialist model of authorial identity that represent the truth. Instead factor models are used to examine the underlying factors influencing the construction of authorial identity in students. From this critical realist perspective, the requirement for the model to be statistically robust is not an exercise to prove that authorial identity exists; model stability can be interpreted as an indicator that social structures underlying authorial identity are common in similar contexts. In this case, factor models are used to identify shared understandings rather than the truth; it is acknowledged that these will not be an exhaustive list or remain definitive in the face of changing higher education contexts.

3.7.4 Statistical Analyses

The psychometric theories outlined in the previous section informed studies two and three. In particular, they influenced the statistical analyses used to develop a latent variable model and psychometric measure of authorial identity. The following section outlines the statistical techniques that were used, raises some key issues, and provides a rationale for some of the decisions that were made during analysis.

Content validity analysis

Assessment of content validity supports the overall construct validity of any psychological assessment tool (Strauss & Smith, 2009). This makes it an important aspect of scale development to consider at an early stage. Mackenzie, Podsakoff and Podsakoff (2011) suggest that assessment of content validity is the third step of ten in a scale development protocol, after developing a conceptual definition and generating items. Haynes, Richard and Kubany (1995) outline content validity's importance - it provides evidence about the relevance of items to measurement of the target construct. Furr (2011) points out that many scale developers rely on face validity as the sole measure of content validity and suggests that this is not sufficient to ensure a valid scale. Face validity refers to how well items in a scale *appear* to measure the specified psychological construct, whereas content validity is how well the scale truly reflects the construct. Evidence of strong content validity should be obtained from experts familiar with the construct (Furr, 2011). Development of scales often includes consulting Subject Matter Experts (SMEs) about the relevance of items to the construct in question; this is done by asking for comments (e.g., Wright & Craig, 2011) or using a quantitative rating scale (Schmidt, Baran, Thompson, Mishra, Koehler & Shin, 2009). Both methods were used in development of the SABAS and the quantitative procedures used to analyse content validity data are outlined in this section.

Lawshe's Content Validity Ratio (CVR)

Lawshe (1975) proposed a quantitative method of assessing content validity for use in psychological testing from an employment context. This approach includes use of expert panel ratings to calculate a content validity ratio (CVR) for each item in an assessment tool. In Lawshe's (1975) example, panel members are asked to indicate whether each item is essential, useful but not essential, or not necessary. CVRs are then calculated using a simple formula:

$CVR = (n_e – N/2)/ (N/2)$

Where CVR = the content validity ratio, n_e = number of SMEs rating the item as essential to measuring the construct, and N = total number of SMEs.

Lawshe (1975) gives a table of minimum CVRs for acceptance in a test, which is presented in Chapter 5 alongside reporting of content validity analysis. This table is based on the CVR value needed to suggest that convergent scores between SMEs is significant at the five percent level. These limits are in line with statistical conventions used in other areas of psychological research as they are comparable to a one tailed test with a minimum p value of .05.

This approach is a systematic method of examining content validity for evaluating items measuring concrete employment based tasks and skills. However, Lawshe (1975) suggests that difficulties arise when items measure constructs with a high level of abstraction. Deductive reasoning ability is cited as an example by Lawshe, because it is a psychological construct that requires close attention. Authorial identity is a relatively abstract concept that is not as established in the literature as deductive reasoning. For these reasons the approach was modified for examining content validity of the SABAS. An account of the modifications is included with reporting of study two.

Mean relevance score approach

Mean content validity ratings have been used to evaluate applied pedagogical instruments; for example, Schmidt et al. (2009) developed and validated a scale for measurement of teachers' Technological Pedagogical Content Knowledge (TPACK): a construct of teacher knowledge required for technological integration (Mishra & Koehler, 2006). Schmidt et al.'s (2009) process used three SMEs and mean ratings in relation to defined subdomains. For the TPACK, an iterative process that included consideration of SME comments alongside numerical scores was employed. For evaluation of the SABAS, a larger number of SMEs was available and a cautious interpretation was adopted due to the abstract nature of the attitudes and beliefs measured. A detailed account of the process used is included with reporting of the study two in chapter five.

Estimating internal consistency

Reliability is an important issue to consider in scale construction and applied use of measures (Furr, 2011). The concept of reliability is derived from CTT as the degree of agreement between infinite administrations of the same test to the same sample (DeVellis, 2012). This is a theoretical concept, because it is impossible to administer a test more than once without the first responses affecting the following responses. Instead, examining reliability uses estimates of the lower bound of reliability.

Cronbach's (1951) alpha is the most commonly used lower bound estimate of reliability (DeVellis, 2012). Statisticians have recognised that α is not the most accurate estimate of reliability (Cronbach & Shavelson, 2004); a number have suggested alternative reliability estimate coefficients, such as Guttman's (1945) λ values, the greatest lower bound (Sjitsma, 2009), and McDonald's (1970) ω_h and ω_t. Cronbach's (1951) α has been shown to be an invalid measure of unidimensionality (Zinbarg, Revelle, Yovel & Li, 2005) and Sjitsma (2009) demonstrated that α is insensitive to internal structure by maintaining α when changing the number of factors between one and three. In fact, Cronbach himself has pointed out that α is rarely the most accurate estimate of reliability available to contemporary researchers (Cronbach & Shavelson, 2004). As a result of these observations relating to α, Revelle and Zinbarg (2009) suggest reporting multiple estimates of reliability to provide more complete information about a measure than simply reporting α. However, α is still commonly used in scale development and boundaries for the use of alternative reliability estimates have not been established in the literature. In fact, DeVellis (2012) suggests that using an alternative to α would require establishing a new set of guidelines for scale development, and that developing a comparable evidence base for using a new estimate would take so much concentrated research effort that the value of such an endeavour would be questionable. This argument is unsurprising when one considers that α has been used for 60 years; pausing scale development for 60 years to improve reliability estimation minutely is not a realistic option. Therefore, Cronbach's (1951) α was used during the main analyses in studies two and three but a number of other reliability estimates are included when reporting the final scale. An overview of these coefficients and justifications for reporting them are included here to aid interpretation of these values.

Revelle's β is an estimate of the worst split half reliability from the sample of item responses and represents a lower bound for all of the reliability estimates. McDonald's (1978) ω_h gives

an indication of how well the items measure one underlying construct (Revelle & Zinbarg, 2009). It is also important to consider ω_h, because it is a better indicator of an underlying general factor than α. The value of ω_h in relation to α is also informative because a $\omega_h > \alpha$ suggests that factor loadings are stronger for group factors than for an underlying general factor (Zinbarg et al., 2005). The remaining three coefficients: Guttman's λ_4; McDonald's ω_t; and Bentler and Woodward's (1980) glb are coefficients that have been shown to outperform each other with higher estimates in specific instances (Revelle & Zinbarg, 2009). As these coefficients estimate a lower bound to reliability, values tending towards 1 can be considered more accurate as they give a smaller range for the true reliability to lie within (between the coefficient and 1).

Guttman's λ_4 was proposed as a calculation of split half reliability; it is one of six coefficients proposed by Guttman (α is equivalent to λ_3), but is conventionally interpreted as the best split half reliability (Jackson & Agunwamba, 1977). McDonald's ω_t uses estimates of uniqueness calculated from FA to find the variance of error in item scores. The error variance and the communality of items are used to estimate the unique variance of each item; these values are then used to estimate the test reliability. Bentler and Woodward's (1980) glb is based on the inter-item covariance matrix, which is theoretically composed of the covariance of inter-item true scores and the covariance of uncorrelated error. The glb is calculated using these matrices as the smallest reliability possible given the observed covariance matrix (Sjitsma, 2009). The values for these three estimates are typically close together and higher than other estimates (Revelle & Zinbarg, 2009); reporting these values will aid further research by providing detailed information about the final scale.

Issues in Exploratory Factor Analysis (EFA)

Factor analysis techniques are used with datasets that feature a number of measured variables; they examine the structures underlying the data by analysing the correlations between measured variables (Tabachnick & Fidell, 2007). Factor analysis (FA), and related techniques such as Principal Components Analysis (PCA), is used extensively within psychology for the development and testing of psychometric measures (DeVellis, 2012). Specifically, EFA is used for exploring datasets to identify latent factors and describe their relationships with observed variables.

Goldberg and Velicer (2006) conceptually describe FA as a variable reduction procedure that replaces a large number of variables with a smaller number of factors; these factors are arranged into a factor model (as described in 3.7.3) that can be used for further testing and development of hypotheses. EFA analyses the correlation matrix of item responses from a dataset to cluster items into related groups. The exact details of this statistical procedure are highly technical and beyond the scope of this thesis. The following outline is a conceptual overview of EFA intended to aid interpretation of study two. Mathematical details have been avoided where possible and examples from DeVellis (2012) have been used for clarity. In addition, a number of decisions accompany the application of EFA techniques for scale development (Velicer, Eaton & Fava, 2000), some are discussed in this section; others are covered in following sections outlining techniques used in conjunction with EFA.

Factor extraction

The process of identifying factors begins by calculating the correlations between *i* item scores in a dataset; this produces a *i* x *i* correlation matrix. One underlying factor can be theorised to influence all of the observed relationships. Although this factor is latent and unobserved, an estimate of its value can be conceptualised as the sum score of all the items, or a total score (DeVellis, 2012). From this it is possible to calculate item-total correlations between each set of item scores and the total score. In a hypothesised one factor model, any two item-total correlations multiplied together is mathematically equivalent to the correlation between the scores of two items. Because the item scores have been observed, the correlations between them are available in the correlation matrix. For each pair of items there is a value for the item-total correlations multiplied together and an observed correlation of the item scores. When the observed correlations are subtracted from the item-total correlations, we are left with a matrix of relationships between items that are not accounted for by the first factor, these are referred to as residuals. This residual matrix can then be analysed in the same way to extract a second factor and leave another residual matrix. This process can continue until *i* number of factors is extracted leaving nothing in the residual matrix. However, it would not make sense to continue extracting factors to this point, as the factor model would have the same number of factors as items in the measure, thus failing to reduce the number of variables.

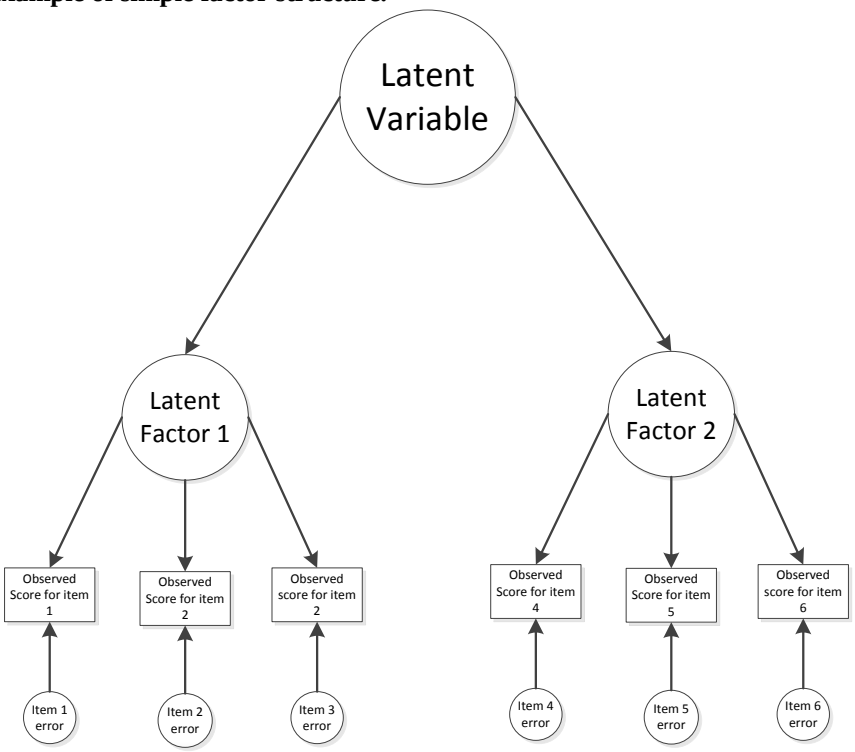
The aim of factor analysis is to reduce the large set of *i* variables into a smaller set of *k* factors, but a model with a smaller number of factors will account for less of the shared

variance in the dataset (Goldberg & Velicer, 2006). This raises the issue of when a factor analyst should stop extracting factors, particularly because an unobserved amount of shared variance will be due to error. This issue is referred to as deciding the dimensionality of a factor model and a number of techniques, such as Horn's (1965) parallel analysis (outlined in section 3.7.6), are available for dealing with this problem. These techniques are based on standardized Eigenvalues calculated from the matrix of item correlations with the factor. The actual process for calculating Eigenvalues is computationally difficult and includes the use of complex matrix algebra. The Eigenvalue is derived from a mathematical solution that consolidates the variance in a matrix; for the purposes of multivariate analyses, it can be conceptualised as an indicator of the variance accounted for by the solution (Tabachnick & Fidell, 2007). Once factors are extracted and Eigenvalues have been calculated to indicate the variance they account for, they must be interpreted by the researcher; this is done using factor loadings and techniques for reaching simple structure.

Factor loadings

Each of the correlations between an item and a factor indicates the strength of the relationship between the observed item and the latent factor; these are referred to as factor loadings (Tabachnick & Fidell, 2007). For any specified factor model, each item can be correlated with every extracted factor, but the strength of these loadings will vary. These loadings form the structure of a factor model and can be conceptualised as a matrix with *k* columns and *i* rows. The aim of EFA is not just to identify a model with a small number of factors, but also to identify a model with simple structure (see Figure 11). Items without significant loadings onto any of the extracted factors are not contributing to the model. In addition, items that load strongly onto multiple factors make the structure more difficult to interpret. A model with weak factor loadings or cross-loadings is not suitable for developing theory because the relationships between latent factors and items are unclear (Comrey & Lee, 1992). In a model with simple structure, each factor has multiple items that strongly load onto it, and each item only has strong loadings for one of the factors. After initial factor extraction, it is unlikely that the factor loadings will be presented with simple structure. In order to improve the structure of loadings, the factors can be rotated (DeVellis, 2012).

Figure 11. An example of simple factor structure.*



*Technically this is an example of simple component structure as the two factors/ components are not correlated.

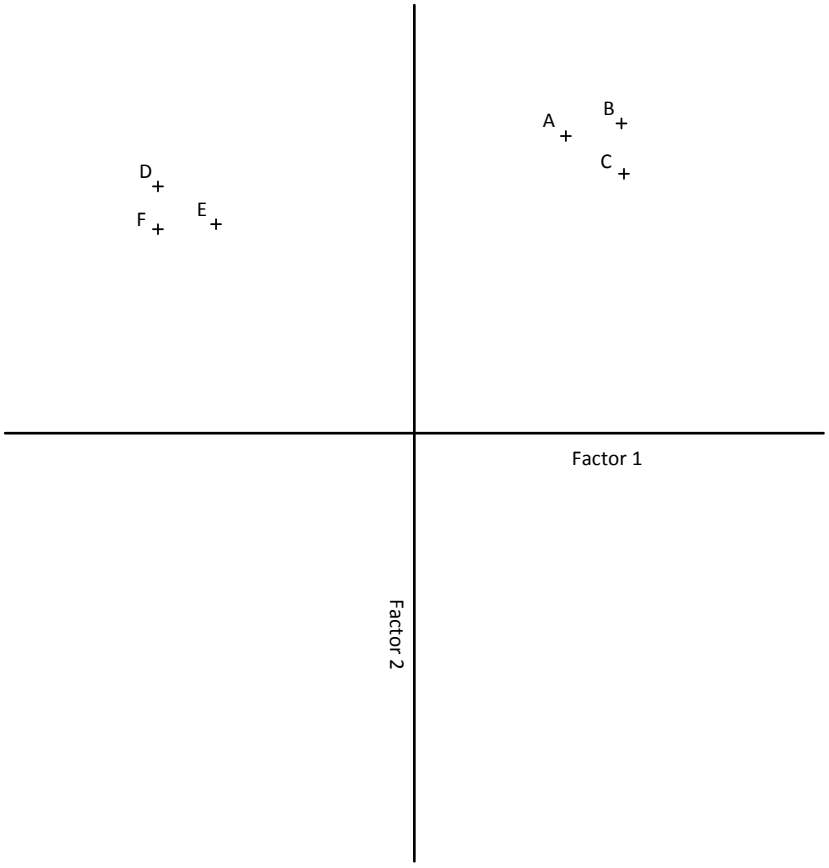
Factor rotation

The loading structure of a factor model can be conceptualised as a matrix of *i* items by *k* factors as mentioned above; it can also be laid out as a path diagram showing only the strong loadings (e.g., Figure 11). The factor loadings within a matrix can be transformed by rotation; there are a number of options for rotation, but they can generally be grouped into two types, orthogonal and oblique (DeVellis, 2012). Once again, the process of rotation is quite technical and involves the use of matrix algebra (Tabachnick & Fidell, 2007); the following is a conceptual outline of factor rotation rather than one that is mathematically analogous to the operations performed by statistical software. For the purposes of this explanation, the example given is analogous to an orthogonal rotation, even though study two used an oblique rotation. This is because orthogonal rotations are easier to illustrate and interpret; the differences between orthogonal and oblique rotations will be discussed after the example is presented.

A different way of conceptualising factor loadings is useful for illustrating the abstract concept of factor rotation; if *k* factors are represented as axes on a graph, each *i* can be plotted at a point corresponding to its loadings. This is best interpreted with an example model that

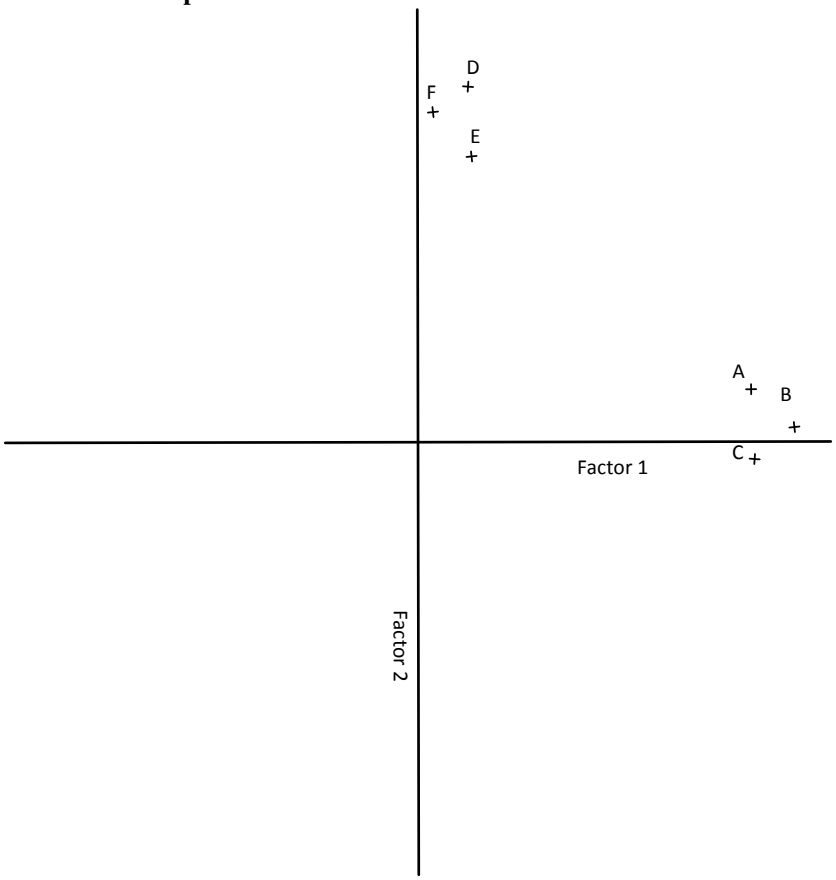
has two factors; for the purposes of this illustration, a model analogous to the path diagram with $k = 2$ and $i = 6$ is suitable (see Figure 12).

Figure 12. Chart of an example factor model before rotation.



Although it is clear that there are two clusters of items that load differently on the factors, it is not possible to interpret either of these clusters as representative of a single factor. In order to describe the approximate location of either group, one would have to include coordinates of both axes. However, the axes can be rotated so that the clusters load primarily onto a single factor. After rotating the factors, the clusters of item scores are easier to interpret, because they primarily relate to one of the axes (see Figure 13.). The cluster of items A, B and C are now locatable by their position on the factor one axis, whereas items D, E and F can be interpreted in relation to the factor 2 axis.

Figure 13. Chart of an example factor model after rotation



This process maximises high loadings and minimises low ones to improve the interpretability of loading matrices (Tabachnick & Fidell, 2007). Rotation of the axes in the figures is analogous to rotating the factors in a theoretical space; this is not difficult to comprehend in two dimensions, but becomes an abstract process when a model has more factors. The example rotation showed axes that remained perpendicular to each other, indicating that the rotation was orthogonal; mathematically, this means that the factors have not been allowed to correlate with each other. It has been suggested that using an orthogonal rotation produces a more easily interpretable model (Goldberg & Velicer, 2006); however, an oblique rotation should be used when the factors are expected to have a relationship based on theory (DeVellis, 2012). Costello and Osborne (2005) point out that social scientists would expect factors to be related and suggest that orthogonal rotation results in a loss of information. In a multifactor model of authorial identity, the factors were expected to correlate, because there are overlaps between beliefs and attitudes. Moreover, Costello and Osborne (2005) argue that oblique rotations are not overly complicated to interpret, so the rationale for using an orthogonal rotation is weakened. Therefore, an oblique rotation was used to interpret the factors extracted in study two.

PCA versus EFA

PCA is more commonly used than EFA in psychology due to its ease of application and interpretation (Costello & Osborne, 2005). Goldberg and Velicer (2006) have suggested that the decision to use principal components analysis (PCA) or 'true' factor analysis (FA) models is unlikely to make a substantial difference in practice and therefore favour PCA for easier interpretability; whereas Costello and Osborne (2005) argue that PCA examines all variance within a dataset, which is unsuitable for researchers looking at related psychological constructs.

Mathematically, this means that the correlation matrix used to extract factors differs from the one used to extract components in one fundamental way. Normally a correlation matrix has ones across the diagonal, because a variable correlates perfectly with itself; this is the matrix that a PCA approach uses. An FA technique only analyses the variable's shared variation with other variables being analysed, so the perfect correlation is replaced with a communality estimate (DeVellis, 2012). This estimate is a number less than one that approximates the amount of variance shared with the other items; the squared multiple correlation is commonly used for this approximation. This is calculated by regressing the variable onto the others in the analysis. Computationally, this rarely makes a significant difference (Goldberg & Velicer, 2006), but theoretically PCA solutions are merely a reorganization of the dataset, whereas FA solutions propose hypothetical latent variables that determine the observations. In other words, a PCA model is determined by the dataset, but an FA model is conceptualised as the cause of our observations (DeVellis, 2012). Of course, this is merely a conceptual difference, because the FA model has to be estimated from the data, effectively making it determined by the data in practice.

FA is theoretically sound in the context of psychological and behavioural research and the results are not particularly difficult to interpret. The dangers of using FA over PCA arise when the analyst does not have a conceptual grasp of the two methods. As long as the researcher is aware that reported variance at the end of an FA refers only to shared variance, there is not a strong rationale for using PCA in psychological research. In fact, many researchers have suggested that common use of PCA is due to its position as a default setting in statistical software (Costello & Osborne, 2005; DeVellis, 2012). Moreover, Snook and

Gorsuch (1989) have shown that use of PCA can be problematic with small samples; therefore, FA was used in study two.

Determining the number of factors to extract

When conducting factor analysis deciding on the number of factors to extract is an extremely important decision that should be made following careful consideration of the data (Velicer, Eaton & Fava, 2000). A number of measurement theorists have commented on the most common method of making this decision: the combined use of the Kaiser (1960) Eigenvalue over one rule and the scree plot (Cattell, 1966). Many have been critical of continued reliance on these methods (Hayton et al., 2004; Velicer, et al. 2000; Zwick & Velicer, 1986), particularly the Kaiser Eigenvalue greater than one rule. Ruscio and Roche (2011) have also pointed out that scree plots can be ambiguous and difficult to interpret. Common practice is to also examine the factor models' compatibility with theoretical conceptions of the construct (Tabachnick & Fidell, 2007). This *a priori* approach to examining psychological constructs has been criticised for its weak rationale (Velicer, Eaton, & Fava, 2000), and there are more accurate statistical methods available (Zwick & Velicer, 1986), such as Horn's (1965) Parallel Analysis (PA) and Velicer's (1976) Minimum Average Partial (MAP) criterion.

PA (Horn, 1965) has been shown to consistently outperform other methods for deciding on the dimensionality of a factor analytical model (Ruscio & Roche, 2011; Velicer et al., 2000; Zwick & Velicer, 1986). The technique uses a Monte Carlo simulation method to obtain multiple randomised datasets with the same number of rows and columns as the empirical dataset. PCA is then used to extract Eigenvalues from each random dataset; a mean set of Eigenvalues is calculated across the iterations and then compared to Eigenvalues extracted from the empirical data. Theoretically, any meaningful factor extracted from the empirical data should have a higher Eigenvalue than its corresponding mean simulated Eigenvalue (Horn, 1965).

PA is commonly recommended (Timmerman & Lorenzo-Seva, 2011), but Costello and Osborne (2005) point out that it is not commonly used due to omission from popular statistics packages. Although Velicer et al. (2000) suggest that researchers use a combination of PA and MAP procedures for determining dimensionality, this has not become common practice in scale development research. This could be due to the large number of PA and MAP variants available; Velicer et al. (2000) tested six PA methods and three versions of MAP,

alongside the Kaiser rule. This simulation study showed that all variants of PA outperformed other methods but those modelling the Monte Carlo simulations with regression models showed problems in certain situations. Given the current level of computational power provided by modern technological advances, there appears to be no reason for using regression models over data simulations. Researchers have also recommended use of higher percentile Eigenvalues rather than the mean Eigenvalues (Buja & Eyuboglu, 1992; Glorfeld, 1995), resulting in another set of PA criteria. Using the 95th percentile Eigenvalue has been recommended due to improved accuracy (Timmerman & Lorenzo-Seva, 2011) and a rationale for dealing with Type I errors. Hayton et al. (2004) suggest that using the 95th percentile is in line with conventions in behavioural research, because it is similar to setting α at .05.

Further discussions on these methods have resulted in newer variants utilising polychoric correlations (Cho, Li, & Bandalos, 2009), tetrachoric correlations (Weng & Cheng, 2005) and PA based on FA rather than PCA (Timmerman & Lorenzo-Sava, 2011). Use of polychoric correlations in FA has received special interest due to the widespread use of Likert scales within behavioural research. The use of Pearson correlations in FA relies on the assumption that scores for an item represent points on a continuous ratio scale. Olsson (1979) developed a maximum likelihood method for estimating correlations between variables on an ordered step based scale, because points on a Likert scale are not truly ratio points on a continuous variable. However, other researchers have explored the robustness of Horn's (1965) original PCA to variations in distribution (Dinno, 2009), calling into question the need for variants that are computationally difficult and discouraging for applied researchers.

Many variants have shown slight improvements in accuracy, although they have not been fully tested. Horn's (1965) PCA based PA has been shown to be reliable and robust (Dinno, 2009); whereas some PA procedures using FA, such as PA using Principal Axis Factoring (PA-PAFA) have been shown to have issues with accuracy in simulations (Timmerman & Lorenzo-Seva, 2011). Although these same simulations have been promising for other FA based PA techniques, such as PA using Minimum Rank Factor Analysis (ten Berge & Kiers, 1991), they have not been used extensively with empirical data. In light of recommendations from Velicer et al. (2000) to use PCA based methods for guiding further FA analysis, the dataset from study two was analysed using PCA based PA to guide decisions about dimensionality. Cho et al.'s (2009) variant using polychorric correlations was used due to

Timmerman and Lorenzo-Seva's (2011) findings of improved accuracy for ordered polytomous items when compared to PA using Pearson's correlations. This variant was chosen after considering published evidence about the robustness and accuracy of PA techniques within the context of scale development (e.g., Dinno, 2009; Timmerman & Lorenzo-Seva, 2011; Velicer et al., 2000).

Issues in Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is a statistical technique that uses Structural Equation Modelling (SEM) to test how well an empirical dataset fits with a latent variable model hypothesised to account for the variance in the empirical dataset (Tabachnick & Fidell, 2007). In scale development procedures it is often used to test models developed from EFA using new samples and datasets (Devellis, 2012). CFA has been increasingly used for examining models of psychological measurement in recent times and journals have welcomed this trend (Schweizer, 2010); with the use of suitable software, SEM is not difficult to apply. However, in comparison to other statistical methods, the findings can be difficult to interpret (Kline, 2005). This section will provide a brief overview of these issues to aid in the interpretation of study three; once again, the technical details have been omitted to provide a conceptual outline rather than a mathematically robust description. In addition, a concluding section examining some of the bad practices regarding CFA interpretation has been included; this is necessary due to significant criticisms in the literature relating to the inappropriate use of CFA, particularly when exploratory approaches would be more appropriate.

SEM techniques require the analyst to specify a factor model before analysing the empirical dataset. This is typically done using path diagrams or by specifying individual paths in text form. The specified model includes all of the hypothesised factors and relationships expected to influence the observed measures in a dataset; this includes error and correlations between factors. A hypothetical covariance matrix is generated from the model and compared to the empirical covariance matrix from the dataset (Schreiber, Stage, King, Nora & Barlow, 2006). CFA examines how well the empirical data fits by calculating fit indices; these are the main output of SEM and interpretation of them is one of the most important steps in the analytical procedure (Yuan, 2005). In addition, CFA software commonly includes modification indices in the output; these suggest ways of modifying the model to improve fit to the data and improve fit indices (Kline, 2005).

The fit indices indicate whether the model accounts for covariance in the dataset and determines whether the analyst tests another model, modifies the one that has been specified, or accepts the tested model. This process is particularly complicated due to ongoing development of different fit indices that reflect different facets of model fit not previously accounted for (Hooper, Coughlan & Mullen, 2008). There are published guidelines for the reporting of fit indices (e.g., Hu & Bentler, 1999), but the topic has been the subject of considerable controversy among measurement theorists. A special issue was published in Personality and Individual Differences dedicated to this debate (Vernon & Eysenck, 2007), with a number of leading SEM researchers contributing articles (e.g., Barrett, 2007; Steiger, 2007; Mulaik, 2007; Miles & Shevlin, 2007; Markland, 2007; Bentler, 2007); the discussion of fit indices in the following section draws upon these articles to present a rationale for how study three was conducted and reported.

Fit indices

The most common indicator of model fit is the model chi-square (χ^2); this test is analogous to null hypothesis tests used in conventional inferential statistics, but the χ^2 is interpreted in reverse (Barrett, 2007). This means that the χ^2 test is used to decide whether one should accept or reject the null hypothesis, but the desired outcome is acceptance of the null hypothesis that there is no difference between the two models. Steiger (2007) describes the null hypothesis in this situation as an idealised perfect fit, as the residual matrix must be sufficiently small to justify non-rejection of the null hypothesis. For this reason the χ^2 test is often referred to as an exact fit test. The χ^2 test is not valid in cases with large sample sizes (Jöreskog & Sörbom, 1982), so a derived version of the χ^2 statistic can be reported instead; this normed χ^2 is a ratio of the model χ^2 and the degrees of freedom in the specified model (Wheaton, Muthén, Alwin, & Summers, 1977), a normed χ^2 below two has been described as an indicator of good fit and below three suggests acceptable fit (Bollen, 1989).

Alternative model fit indices are referred to as approximate fit indices because the premises are not as stringent as those of the χ^2. Barrett (2007) has suggested that exact fit tests are the only suitable indicator of good fit when reporting CFA studies, but this approach has been criticised heavily by other SEM experts (e.g., Steiger, 2007; Bentler, 2007; Millsap, 2007). Many commentators agree with Barrett (2007) that approximate fit indices have been misused when reporting CFA, but they suggest that their inclusion is suitable when

interpreted carefully and appropriately (Goffin, 2007; Markland, 2007). In addition, Miles and Shevlin (2007) have shown that interpreting the χ^2 test alone (as suggested by Barrett, 2007) can result in errors that are easily avoided by examining other indices.

There is a wide range of approximate fit indices available to a CFA researcher, so it is necessary to choose the most suitable ones to report with a model. Kline (2005) describes a minimal set consisting of the model χ^2 (an exact fit test), the root mean square of approximation (RMSEA) (Steiger & Lind, 1980), the Comparative Fit Index (CFI) (Bentler, 1990) and the standardised root mean square residual (SRMR); these are also regarded as the minimum set by journal editors (Schweizer, 2010). Common approximate fit indices take size of sample and complexity of the model into account by including the degrees of freedom in their calculation.

The RMSEA has been described as the most informative fit index available for a CFA analyst (Diamantopoulos & Siguaw, 2000); it indicates how well the model would fit if optimally chosen parameter estimates were used to model the data (Hooper et al., 2008). Upper limits for the RMSEA have varied, with some researchers suggesting that .05 to .10 be used as an indicator of good fit (e.g., MacCallum, Browne & Sugawara, 1996). Contemporary guidelines advise that the more stringent criteria of below .07 be used to assess this index (Steiger, 2007). In addition, the RMSEA index is compatible with mathematical approaches to calculate confidence intervals, allowing a researcher to test the null hypothesis of poor fit more precisely (McQuitty, 2004).

The CFI was proposed by Bentler (1990) as a method of comparing the model χ^2 to the χ^2 of a null model, with an adjustment to take sample size into account. Compared with earlier indices working on this principle (e.g., the Norm-fit index, Bentler & Bonnet, 1980), the CFI performs well even when the sample size is small (Tabachnick & Fidell, 2007). The SRMR is an index calculated from the square root of the difference between the residual matrix from the observed data and the proposed model (Kline, 2005). Values for the SRMR range from zero to one, with lower values indicating good fit. A well fitting model should have an SRMR of below .05 (Byrne, 1998), but values as high as .08 have been suggested as acceptable (Hu & Bentler, 1999).

Although there are guidelines published for evaluating these and other approximate fit indices (Hu & Bentler, 1999), Marsh, Hau and Wen (2004) have warned that the cut-offs presented by Hu and Bentler should not be used as golden rules for CFA interpretation. In addition, Steiger (2007) has pointed out that the types of model misspecification indicated by approximate fit indices have not been established in the literature; this means that two models with the same approximate fit index could be poorly fitting models for different reasons. As some reasons for poor model fit are different to others, it is difficult to assess a CFA using one or two indices alone. In addition to the minimal set suggested by Kline (2005), Schweizer (2010) suggests reporting other indices as suitable for the study.

Criticisms of CFA

The increasing use of CFA in psychological measurement has been met with alarm from some researchers. As with any technique that rapidly increases in the popularity of its use, some published studies have used questionable practices. Chiefly among these is the lack of detail provided when reporting; in addition to the issues with fit indices mentioned above, Jackson et al.'s (2009) review of articles presenting CFA models found that many researchers fail to report tests of multivariate normality and the amount of data missing from a dataset. In addition, they suggest that researchers do not specify the number of models tested before settling on the model that they report. DeVellis (2012) suggests that this can lead to CFA being used in an exploratory fashion, testing models until one fits. This can be countered by only testing models with strong theoretical foundations and reporting all of those that were fitted to the data. In addition, limiting the use of modification indices has been advised (Hooper et al., 2008) and it is generally agreed that model modification should only be used when there are strong theoretical foundations for doing so (MacCallum & Browne, 1993). In particular, it is strongly advised that error terms should not be correlated as part of model modification unless there is strong theoretical justification for a relationship between the two respective variables (Gerbing & Anderson, 1984). In addition, any model modifications must be reported with the final model (Jackson et al., 2009); Bentler (2007) has even suggested that CFA reporting should include a statement confirming that the models tested were *a priori* hypotheses.

The increasing use of CFA has led to it being regarded as the successor to EFA for development of psychological measures. Although there are many advantages to CFA, the complexity of the approach means that there are many pitfalls for the novice researcher to

avoid. In fact, Saucier and Goldberg (1996) suggest that replication of models through EFA is a more rigorous test of a model than CFA. A combination of testing many models and using modification indices can lead to use of CFA in situations where EFA is more appropriate; the statistical power of CFA means that given enough time and tests, a well fitting model could be found for any set of data. Whether this model had any relation to variables in the real world would be another matter entirely (DeVellis, 2012).

Finally, although CFA is a powerful statistical technique that has been applied extensively in psychological measurement, researchers need to remain aware that it is merely a statistical tool. DeVellis (2012) warns that more complex models are often better at modelling data precisely and CFA output does not include indices to measure how well the model fits with common sense; the evaluation of CFA is ultimately up to the researcher, who must not be blinded to theory by a quest for statistical accuracy.

3.7.5 Assessing Validity and Quality

The multivariate analysis techniques used in studies two and three are complicated and technical procedures. However, their use is well established in scale development (Tabachnick & Fidell, 2007) and there are extensive guidelines for their application (DeVellis, 2012). In order to ensure that the two quantitative studies are of high quality, a rigorous design was adopted and findings are reported transparently.

Systematic sampling strategies were employed to maximise representativeness and items were generated using a robust method informed by a qualitative interview study (study one). The development study (study two) included assessment of content validity, internal consistency and dimensionality. The validation study (study three) used a separate sample to assess model validity, convergent validity, and test-retest reliability. These areas are recognised as key considerations in scale development (DeVellis, 2012) and coverage of all of them is a sign of quality research in the field of psychological measurement.

The way that the studies are reported is also a strength; both are reported in full and many details included go beyond the conventions of published scale development research. Lack of methodological detail when reporting is cited as one of the main problems in measurement research (Jackson et al., 2009), and the reporting in this thesis has not omitted any relevant details. All findings, models and data screening procedures have been reported, including

negative results; this is in accordance with guidelines set out by leaders in the field of psychological measurement (e.g., Goldberg & Velicer, 2006; DeVellis, 2012; Kline, 2005; Bentler, 2007).

3.7.6 Summary of Quantitative Methods

This section of the methodology has laid out the procedure adopted for studies two and three. The sampling strategy and aims of purposive sampling have been outlined along with an account of the data collection methods used. The largest portion of this section has been devoted to outlining analytic procedures used in the studies, because of their highly technical nature. A detailed overview of these techniques will aid in the interpretation of chapters five and six, where the findings will be reported alongside scale development jargon that would be difficult to interpret without conceptual knowledge of the process.

3.8 Chapter Summary

The current chapter has outlined the methodological issues relevant to the studies in this thesis. Rather than reporting the methods used, the chapter has discussed topics that were considered in relation to qualitative and quantitative aspects of the entire research project. The following three chapters report the studies themselves with a detailed account of the methods and findings for each one.

Chapter 4

Study 1: Exploring Academics' Understandings of Authorial Identity

4.1 Overview

This chapter presents an exploratory study examining the way that professional academics understand authorial identity in academic writing. Interviews were conducted with a multidisciplinary sample of 27 academics and analysed using inductive thematic analysis. The findings suggest that academics understand writers with authorial identity as individuals with certain characteristics; these are identified in the subthemes presented in the analysis part of this chapter. An authorial writer was expected to have confidence, value writing, take ownership of their writing, demonstrate authorial thinking, and set suitable goals. In addition, two integrative themes underlying the subthemes were also identified in the analysis: authorial identity as 'tacit knowledge' and 'negotiation of identities'; these highlight the importance of social factors in the development of authorial identity. A discussion of the pedagogic implications of this study, and the way it informs the following studies of this thesis, is included in the closing sections of the chapter.

4.2 Introduction

Authorial identity has been proposed as a pedagogic issue relating to student plagiarism and also as a construct that can be targeted with instruction; for use of authorial identity to be effective, the way that it is understood needs to be investigated. Current understandings of authorial identity have been developed from research focusing on the perspective of students (e.g., Abasi et al., 2006; Ballantine & Larres, 2012; Pittam et al., 2009). This is a justifiably important position to examine but another central group of stakeholders has been overlooked in previous work: that of the professional academics who assess student work. Student understandings of plagiarism (Ashworth et al., 1997; Bennet, 2005), academic writing (Clark & Ivanic, 1997; Ivanic, 1998) and authorial identity (Abasi et al., 2006; Pittam et al., 2009) have been investigated in research. Other researchers have looked at staff perspectives on student plagiarism (Abasi & Graves, 2008; De Jager & Brown, 2010; Flint, Clegg & Macdonald, 2006) and aspects of academic writing (Harrington, Elander, Norton, Reddy & Pitt, 2006). Comparing staff and student perceptions of plagiarism (Wilkinson, 2009) has also been a focus of research, but studies examining staff understandings of authorial identity are missing.

The concept of authorial identity is not a simple one and the meaning of the term is likely to differ across cultures, disciplines, institutions and even individuals. In order to establish a meaningful model of authorial identity that can be used in research and pedagogy, detailed

exploration of how it is understood by all parties involved in student academic writing is required. The current basis for authorial identity interventions (Elander et al., 2010) relies on a framework of authorial identity developed by examining student perspectives (Pittam et al., 2009). Moreover, the student perspective informs the only measure of authorial identity in students that has been used in authorial identity research: the Student Authorship Questionnaire (SAQ) (e.g., Ballantine & Larres, 2012; Kinder & Elander, 2012; Maguire et al., 2013). This framework needs to be complemented by research looking at the way that academics understand the concept. As Russell et al. (2009) suggested that writing research should take disciplinary context into account, the participants in the present research included academics from a range of disciplines. This study used qualitative research methods to focus on this gap in the literature and establish the understandings of authorial identity held by professional academics.

Interviews with academics were conducted and analysed to identify the understandings of authorial identity held by academics. This research was intended to inform a model of authorial identity for use in policy and pedagogy related to plagiarism. In addition, the interviews aimed to inform an item pool for study two, a scale development study to address the limitations of the SAQ.

4.3 Aim

The aim of study one was to explore the ways that professional academics understand the concept of authorial identity in academic writing. In addition, the research was conducted as part of item generation to inform development of the psychometric scale in study two.

4.4 Method

4.4.1 Design

A qualitative approach was adopted to explore academics' understandings in detail; this approach to conducting exploratory research was intended to avoid limiting the findings with *a priori* assumptions of attitudes with specific quantitative measurement instruments. The aims also informed development of the interview schedule, which covered a wide range of topics related to academic writing and plagiarism.

4.4.2 Participants

Recruitment was intended to provide a wide range of participants in relation to gender, age, academic discipline, publication history and level of teaching experience. Suitable members of academic staff were identified using pre-determined inclusion criteria and exclusion criteria. These were:

Participant inclusion criteria

- Taught for one year or more at any higher education institution.
- Had experience of assessing undergraduate level coursework assignments.
- Specialised in the same discipline as the identified department, or a sub-discipline.

Participant exclusion criteria

- Had not taught in a higher education context for the last 5 years.
- Did not have experience of teaching and assessment at undergraduate level.
- Teaching experience did not include at least one year at a publicly-funded UK institution.

To avoid logistical problems in the event of a high response rate, departments were contacted one at a time. Invitation emails to individuals were sent together when managerial consent had been obtained and follow-up emails were sent to non-respondents after two weeks. Email invitations with information (see Appendix 4) were sent out to 62 professional academics fulfilling the inclusion criteria. Follow up emails were used to maximise the number of participants recruited; 35 did not respond to the communications, 27 positive responses were followed up by the researcher and interview appointments were made.

The participants were therefore 27 academics teaching at various UK universities. All 27 participants identified as lecturers and held posts that included undergraduate teaching responsibilities. Table 5 shows participant background information and the pseudonyms used during transcription. Age has been reported approximately and small details have been omitted to preserve the anonymity of participants.

Table 5. Participant information for study one

Pseudonym	Age	Gender	Description of experience	Subject	University context
Damian	26-35	M	Has six years of experience teaching in HE First language is not English. Has a Master's level qualification from an overseas university. Doctoral studies completed at a UK institution. Published a number of papers in peer reviewed journals.	Psychology	Post-1992
Stuart	26-35	M	Taught during his PhD studies at a pre-1992 institution. Has held a lecturer post for the last three years. Has published articles in journals and is also the editor of a journal.	Psychology	Post-1992
Richard	46-55	M	Has taught psychology at a higher education level for over 25 years. Holds a senior teaching post that includes teaching undergraduates. Experience includes a period as head of a psychology department. Has published books and articles sporadically during his career.	Psychology	Post-1992
Natalie	26-35	F	Works as a lecturer who has been teaching for two years. Teaches both undergraduate and postgraduate modules. Has published one journal article and a chapter for an edited book.	Psychology	Post-1992
Naomi	36-45	F	Holds a senior research related post. Has taught at a higher education level for over ten years. Has extensively published research in journals.	Psychology	Post-1992
Geoff	26-35	M	Works as a lecturer who has been teaching for over five years. Worked as a temporary lecturer at another Russell Group university. Completed his PhD at a Russell Group university. Has published peer-reviewed research articles throughout his career.	Philosophy	Russell Group
Liam	36-45	M	Works as a senior lecturer who has been teaching in HE for 10 years. Completed his PhD at a Russell group institution. Has worked in other Russell group institutions prior to his current post.	Philosophy	Russell Group

			Has published journal articles and books throughout his career.		
Arthur	36-45	M	Holds a University Professorship as head of a department. Has extensive teaching experience over 20 years in the UK and US. Has published over 50 articles and a few books during his career.	Philosophy	Russell Group
Gordon	46-55	M	Holds a senior teaching post with no formal research commitments. Has taught at HE level for over 20 years. Has published book reviews, but does not concentrate on publishing.	Philosophy	Russell Group
Kareena	26-35	F	Holds a managerial position within her department. Has been teaching for nine years at HE levels. Has published peer reviewed journal articles and book chapters.	Philosophy	Russell Group
Jackson	46-54	M	Holds a University Professorship at his institution. Has been teaching at HE level for over 10 years. Has published journal articles and books throughout his career.	Education	Post-1992
Maggie	46-55	F	Holds a senior teaching post. Has taught at HE level for over 10 years. Has taught psychology and education students at HE level. Completed a PhD on Education and Psychology. Has published books and chapters throughout his academic career.	Education	Post-1992
Anthony	56+	M	Works as a senior lecturer. Has been teaching at HE level for over 15 years. Contributes to teaching University colleagues. Has published a widely regarded book and edited collections.	Education	Post-1992
Robin	36-45	F	Holds a senior teaching post. Main teaching responsibilities focus on pre-registration nurses. Has published book chapters in her specialist area.	Nursing and Healthcare Practice	Post-1992
Janet	45-54	F	Works as a lecturer who has been teaching for six years. Has taught at a range of levels from BTEC to postgraduate level. Has presented research at conferences, but has not published articles.	Nursing and Healthcare Practice	Post-1992

Ryan	36-45	M	Has been teaching at HE levels over the last three years. Splits hours between an academic post and an applied healthcare post. Has presented conference papers, but has not published articles.	Nursing and Healthcare Practice	Post-1992
Tak Wing	46-55	M	Holds a managerial position within his department. Has been teaching at HE level for over 15 years. Worked in industry prior to his academic career. Is an active researcher with articles published in his specialist area.	Engineering	Pre-1992
Jamie	36-45	M	Holds a post as head of a subject area. Has worked in academia for over 20 years. Has been teaching at higher education level for over 10 years. Worked as a researcher at a Russell group institution for 5 years. Has published books and journal articles throughout his career.	Engineering	Post-1992
Lucas	56+	M	Holds a University Professorship as head of a research group. Teaches undergraduate modules in his specialist area. Has published over 70 articles, books and book chapters.	History	Post-1992
Amy	26-35	F	Holds a senior teaching post. Teaches and manages undergraduate programmes. Completed her PhD at a Russell Group University. Has published peer-reviewed articles and book chapters.	History	Post-1992
Charlene	46-55	F	Holds a Professorship as head of a university department. Has been teaching within HE for over 10 years. Has published a large number of articles and book chapters.	Business and Marketing	Post-1992
Trina	36-45	F	Works as a senior lecturer. Teaches on marketing and business programmes. Has taught at FE level previously. Has published peer-reviewed articles, books and book chapters.	Business and Marketing	Post-1992
Sarah	36-45	F	Holds a senior teaching post and heads a research group. Has been teaching in higher education for over 5 years.	Biological Sciences	Post-1992

			Previously worked in a research role at a Russell group university. Has published peer-reviewed journal articles throughout her career.		
Chun Kit	46-55	M	Professor with over 20 years of experience in the HE sector. Has taught at HE levels throughout his career. Has published over 50 written works including articles and books.	Mathematics	Post-1992
Stanley	46-54	M	Holds a post as head of a subject department. Has taught at HE level for over 15 years. Worked as a professional in industry internationally before academia. Has published a small number of academic articles and books.	Law	Post-1992
Elaine	26-35	F	Works as a lecturer who has been teaching for three years. Teaches undergraduate modules. Has specific responsibilities for academic writing. Has published a few peer-reviewed articles and book chapters.	Languages	Post-1992
Dominic	26-35	M	Works as a senior lecturer with over six years of experience in HE. Teaches across undergraduate and postgraduate levels. Works on projects in industry alongside his HE commitments. Does not concentrate on publishing research.	Music	Post-1992

Note the abbreviation HE has been used to refer to higher education and the abbreviation FE has been used to refer to further education in this table.

4.4.3 Procedure

Two pilot interviews with academics were run as discussions around the concept of authorial identity; these were not recorded or analysed and the participants were not included in the main sample. The questions for these pilot interviews were developed from the literature (Abasi et al., 2006; Elander et al., 2010; Hyland, 2002; Pittam et al., 2009) to centre on the main issues related to both authorial identity and plagiarism. The topics covered a wide range of areas including the importance of authorial identity to participants as writers, as readers of articles, and as assessors of student work. In addition, the questions covered subjects that have been highlighted in the literature, but were designed so that participants were not primed to give expected responses. For example, research has suggested that ESOL students and students with dyslexia have more difficulties associated with authorial identity (Abasi et al., 2006; Kinder & Elander, 2012); instead of asking directly about these groups, participants were asked to identify any groups that they understood as having more difficulties than others. In addition, questions were designed to require open ended answers with explanations. The interview schedule was refined following these pilots and issues regarding interview technique were noted by the researcher. The wording, length and content of the final interview schedule were modified before use with participants in the main study.

The question 'What is your definition of an author?' was added to the interview procedure as the pilot interviews revealed that individuals had different understandings of the term. The researcher asked this question at the start of the interview before moving on to other questions on the interview schedule. As definitions for author are widely available, this question was omitted from the schedule sent to participants in advance. The pilot interviews indicated that interviews would last approximately 45 minutes using the proposed interview schedule; this was considered to be a suitable length of time for each interview.

Once an interview was arranged, an interview schedule (Table 6) was sent in advance to the participant by email. Interviews took place in the participant's office or a room booked on the participant's university campus. A briefing about ethical considerations and background to the research was conducted before each interview. Participants were provided with a written copy of the information for reference (Appendix 5), and invited to ask questions before the interview began. They were also asked to provide a unique identifier code for entry onto their consent forms (Appendix 6) to identify transcripts and recordings in the event of withdrawal.

Table 6. The interview schedule sent to participants and used for conducting interviews in study one.

Schedule of Interview Questions

Please note that this schedule is not a rigid framework and further questions may be asked to encourage clarification and deeper explanations during the interviews.

What is your definition of an author? [This question was omitted from schedule sent to academics]

In what ways do you think your sense of yourself as an author is important in your own academic writing and publications?

In what ways do you think the author's presence in the text is important, when you are reading articles written by other academics in publications?

How do you think this sense of yourself as an author relates to your sense of self as a member of your academic discipline and community?

In what ways do you think a student's presence in the text is important, specifically when reading and assessing academic assignments written by students?

How do you think that the student's presence in the text relates to the quality of the grade received when assessing student assignments?

How do you think a student's sense of identity as a member of the academic community effects their academic writing?

How do you think students' approaches to learning and study skills effect the sense of themselves as authors of their assignments?

What difficulties do you think students have when expressing their own identity in their assignments?

Are there any particular groups of students that have more difficulties than others with conveying a sense of authorship in their academic writing?

How do you think that students' sense of themselves as authors could be improved?

What particular features in text do you think impact the way that a writer's presence is conveyed to the reader?

How do you think the conventions about the presence of the author in academic writing may differ in your own academic discipline when compared with others?

How do you think that this sense of self relates to student plagiarism?

Psychological research has suggested that undergraduate students lack understanding of 'authorial identity.' How do your experiences relate to this assertion?

Audio recording did not begin until informed consent had been given and the participant indicated that they were comfortable to begin. Interviews lasted between 40 and 80 minutes and covered the questions in the interview schedule (Table 6). Follow up questions and discussion points were used by the researcher to explore areas of interest or to probe participant perspectives. Participants were also offered the opportunity to add any comments that they felt would be relevant at the end of the interview. They were then given a debrief sheet that included further information and contact details for the researcher and supervisor (Appendix 7). The opportunity to ask further questions outside of the recording was also offered during debriefing.

All audio recordings were transferred to a password protected computer on the same day. They were saved under a recording number and the participant's unique identifier. All consent forms (Appendix 6) were stored separate from transcripts to prevent identification of those interviewed; storage was locked to prevent breaches of confidentiality.

The recordings were transcribed verbatim and pauses or distinct sounds were also noted in the transcript as considered necessary by the researcher. The resultant data corpus was approximately 195,000 words in length. Use of more detailed transcription such as the Jefferson technique is not required for thematic analysis (Braun & Clarke, 2006). However some Jefferson notations as outlined by Atkinson and Heritage (1984) have been used in presentation of extracts from the transcript. It should also be noted that some of the notations used differ from those recognised as Jefferson transcription; these are outlined in Appendix 8.

4.4.4 Analytic Approach

The interview transcripts were analysed using thematic analysis as outlined by Braun and Clarke's (2006) six-phase process and described in chapter 3. The resulting themes summarise the salient features of a large data corpus in an accessible format, without compromising the depth of the analysis. Previous research examining authorial identity (Elander et al., 2010; Pittam et al., 2009) has used thematic analysis to inform pedagogic practice in relation to plagiarism and authorship. This research was conducted to explore authorial identity and further inform higher education policy relating to the concept; the accessibility of thematic analysis reports makes this analytical approach useful for informing policies in applied settings (Braun & Clarke, 2006), such as education.

Although the study was positioned from a realist perspective, it was recognised that the concept of authorial identity could only be examined through a phenomenological lens. This research aimed to explore understandings of authorial identity and the literature was considered too limited to provide an *a priori* framework for deductive analysis. The subjective phenomenological nature of academics' understandings of authorial identity made it a suitable subject for inductive analysis. This allowed the analysis to account for unanticipated themes and possible variation in academics' attitudes.

The researcher conducted the interviews and read the transcripts extensively to ensure that there was sufficient interaction with the data, as recommended by Braun and Clarke (2006). A data driven approach was taken towards generating initial codes using Nvivo 9 software to organise coding. The researcher collated these codes and identified recurring patterns in the data that were clustered into themes and subthemes with initial titles. An interpretative approach followed for reviewing the themes by checking them with the extracts coded for them. At this stage, the themes were evaluated in terms of their relevance to the research question. The transcripts and themes were also presented to the director of studies who acted as an auditor of the analysis. This was done to provide a credibility check to ensure that interpretative elements of the analysis were valid; Elliot, Fischer and Rennie (1999) have suggested that taking these steps improves the quality and rigour of qualitative analyses. The researcher and auditor continued to review the analysis regularly throughout the rest of the process. Following this, the main themes were further examined before final definitions and names were decided upon. A report of these themes follows in the analysis section of this chapter.

4.5 Analysis

The analysis revealed that academics understood a number of factors to be influential on a writer's "sense of themselves as an author" (Pittam et al., 2009, pp. 153). These factors were identified by five subthemes that contribute to the main theme of 'authorial writer'. This main theme centres on the academics' shared understandings of an individual with authorial identity. The five subthemes refer to characteristics understood to define a writer with authorial identity; each subtheme also identified different requirements for authorial identity in students and in academics. In addition, two integrative themes were interpreted as underlying the other subthemes; these were also understandings of authorial identity: as tacit knowledge and as a negotiation of identities. An overview of the themes is presented

alongside example quotes in Table 7 and a thematic map shows the structure of relationships between the main theme, subthemes and integrative themes (Figure 14).

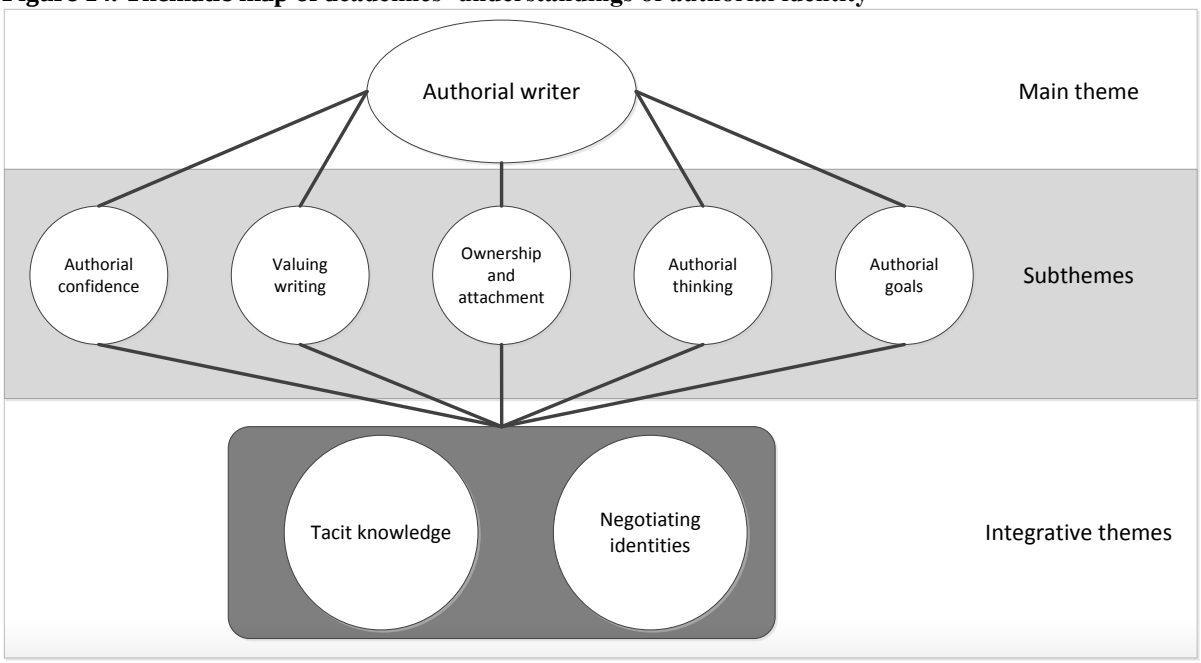
Main Theme: *The authorial writer*

Authorial identity was understood as an attribute or a cluster of attributes that a writer could have; these were conceptualised as detectable in writing. Presence of these characteristics indicated that the writer had strong authorial identity. This theme results from exploration of the abilities, emotions, knowledge and attitudes that someone composing academic writing can have and how they relate to a person writing with a high level of authorial identity. The findings highlighted that conceptualisations of an 'authorial writer' differed when referring to professional academics as writers, compared with students as writers. Five subthemes representing typical characteristics of an authorial writer as understood by participants were identified and they are presented in detail below. An authorial writer was expected to have confidence, value writing, take ownership of their writing, think clearly, and set suitable goals.

Table 7. Table of themes identified in the thematic analysis from study one

Main themes Subthemes	*Example extracts*	Participant	**Integrative themes** *Example extracts* (participant)	
Authorial Writer			**Tacit Knowledge** *"you don't talk to them about authorship"* (Natalie)	**Negotiating identities** *"in order to have an authorial identity, you've got to have an identity first."* (Anthony)
Confidence	*"I think confidence is probably the biggest thing."*	(Gordon)		
Valuing Writing	*"I try and communicate to my students that writing is important"*	(Trina)		
Ownership	*"Authorship is about producing something completely of you"*	(Elaine)		
Thinking	*"The skill of being a good author is the skill of marshalling your thoughts"*	(Jamie)		
Goals	*"Writing for different purposes for different audiences."*	(Anthony)		

Figure 14. Thematic map of academics' understandings of authorial identity



Subthemes:

Authorial confidence

The analysis revealed shared expectations about an authorial writer's confidence. The academics expected themselves and their peers to be confident about their written contributions to academic discourse. Self-beliefs were understood as related to motivational issues in students. There were concerns that students were not motivated to improve their writing and that this was a barrier to development into authorial writers, consistent with research showing that self-beliefs have a significant impact upon academic achievement in a number of domains including writing (Valentine, DuBois & Cooper, 2004).

Academics perceived authorship and confidence to be topics that were closely linked; they expressed their own self-beliefs about writing when explaining authorial identity's importance to their own writing.

> "Blowing my own trumpet but I do think I write well and I think that's half the battle. So that authorial element is very important for me personally and in what I do and how I construct stuff." (Richard, Psychology)

Confidence was understood to facilitate writing with authorial identity. For example, when discussing the link between authorial identity and the quality of academic pieces, confidence enabled writers to take risks and edit their work:

> "If authorship is expressed as a way of taking a risk, and it ultimately is… I think it comes with confidence." (Elaine, Languages)

> "You can find any book and think there's no way I could write like that. You can, it just takes longer and the willingness to engage with the editing process and the refinement process and adding all the confidence, particularly to write off the section of text that they might just have spent seven hours wrestling over." (Dominic, Music)

Academics reflected on their own development as academic writers, and suggested that increased authorial identity could be attributed to gaining confidence.

> "I remember my husband reading something and saying, well that just isn't you in the document, and that's because I was, I thought I had to write academically, whereas now, I probably feel more comfortable, more confidence, there's more of me in it, so maybe there's confidence in there." (Janet, Nursing and Healthcare)

> "it was only by the end of my undergraduate degree and in my MBA that I started to be very much more confident with how I was writing and how I was using other sources." (Trina, Business and Marketing)

Others lacked confidence in this domain. For example, when asked about his authorial identity, one academic compared his writing experience to others negatively:

> "in terms of my level of writing experience isn't brilliant. Academically I was better in science subjects than English language, so I do feel [...] I don't know what the word is, but I don't feel as empowered as others in this area in terms of my writing skills." (Ryan, Nursing and Healthcare)

Senior academics had concerns about the development of authorial identity in their peers and expressed these concerns as issues relating to confidence. When discussing authorial identity in student writing, one professor suggested that staff had difficulties themselves, and that this impacted on the way that writing was taught to students:

> "it's not surprising the students don't get it because the staff need that help as well, erm and that's a confidence thing and the technique thing, erm, but it is something I think we can work on." (Charlene, Business and Marketing)

These concerns were situated in the context of Charlene's university, but an academic with a background in established Russell Group universities also expressed negative perceptions of himself, in spite of feeling positive about his authorial identity.

> "I suppose my, my view of myself on, in print is that, um, I make reasonably regular, reasonably positive contributions to things, whereas in the interpersonal community and perhaps in the, in the sense of 'how good are you' kind of thing, I think of myself as being quite poor." (Geoff, Philosophy)

A programme of research examining self-beliefs related to writing has shown that confidence in one's own abilities, motivation and writing outcomes are linked (Pajares, 2003). When discussing authorship in students, academics understood an overly cautious approach to be detrimental to authorial identity:

> "I think some students are more tentative in the written text as well. So I've not really thought that through, but that notion of tentativeness in the spoken form, I think can be linked to a parallel version in the written form as well." (Jackson, Education)

Academics believed that results from further education affected students' confidence about writing before they began teaching them; some identified students with low UCAS scores as having more difficulties with authorial identity and attributed this to their confidence:

> "I have this feeling that although it doesn't really say anything to me, these UCAS scores, or A levels or whatever, they have a huge impact on the confidence of students." (Damian, Psychology)

These issues were attributed to students' experiences in further education; when asked to describe difficulties encouraging authorial identity in students, academics pointed to observations about secondary education.

> "I think confidence is probably the biggest thing, but I think the confidence issue is related to teaching to the exam and a narrow focus on assessment and so on in secondary." (Gordon, Philosophy)

When asked whether students developed authorial identity, lecturers felt that they improved considerably and attributed this change to increasing confidence:

> "if they have developed sort of articulate skills and developed the ability to have a strong sense of confidence and analytical skills then they can give effect to themselves as being authors, rather than scribes." (Stanley, Law)

> "the development change is amazing really. I think that they do develop, they develop their confidence in themselves." (Maggie, Education)

Although there was a shared understanding that confidence was important, some academics expressed the view that this was determined by students' abilities as writers.

> "we say that someone's self-esteem is low and confidence is low, I think that has a direct relationship with the level of their skills in that sort of area... you could see the confidence as an attribute of the ability as opposed to a causal factor in reducing the ability." (Jackson, Education)

> "I mean if you're writing with bad syntax and bad grammar, your spelling's all over the place, things like this, you're not going to feel very confident." (Lucas, History)

Self-belief regarding writing ability was not the only domain identified as important by academics; authorial identity was also linked to confidence about students' thinking processes and ideas; some academics argued that confidence in this domain was more important than issues related to writing ability.

> "the key part is confidence. So, you know, I think, if we spot someone, say for example, from a kind of non-traditional background and their writing has got lots of interesting, quirky and vibrant ideas, might be full of spelling errors and it might be very subjective and not properly referenced, I think we should encourage them by saying you've got some really interesting ideas here, but we'd like you to, you know, like to try and help you to express them more clearly." (Anthony, Education)

This was further compounded by observations that students were not confident enough to have their own ideas. For example, when one academic in the study was asked why students struggled with authorial identity, he suggested that fear and a lack of confidence were barriers:

> "it's almost as if they are either afraid or not confident enough to have their own thoughts… most of the time they are just not confident enough." (Damian, Psychology)

These academics' teaching experiences were from post-1992 universities and one of them attributed self-belief issues to students' social comparisons with those from more established institutions.

> "the students there [post 1992 institution in location] were far less confident, even the first year ones, even than here. And I think it was partly because of UCAS scores and partly … there was always this contrast between the real [same location] University and then the second class one." (Damian, Psychology)

This would suggest that students from prestigious universities experience fewer difficulties with authorial identity and confidence; however, when asked about difficulties encouraging

authorial identity, academics at Russell Group universities also observed issues relating to confidence in their students:

> "they also don't in lots of cases have the confidence to do it, which is one of the things that we struggle with in our teaching." (Kareena, Philosophy)

These problems manifested in student assignments and were perceived as having a detrimental effect on students' writing styles.

> "it occurred to me that another way in which that lack of confidence can be manifested is in persons' trying to adopt the style even though the writing is their own so to speak ... Well again I think that probably relates to confidence." (Gordon, Philosophy)

Healthcare academics understood confidence issues with authorial identity to have far-reaching implications outside of students' academic work, because a proportion of their students were already practicing as clinical healthcare professionals. For example, one academic commented on the way that a lack of authorial identity impacted their work in practice:

> "they start to question their clinical practice and they start to go on a rollercoaster ride of a lack of confidence and that confidence that I can't write this, I can't do this academic work." (Janet, Nursing and Healthcare)

When asked to evaluate the importance of improving authorial identity, it was suggested that it would have a positive effect on student confidence.

> "I do think they should be aware of it, yes. Erm, I think it's an area that gives students more confidence if they start to understand some of the issues around writing." (Charlene, Business and Marketing)

Developing confidence was considered to be conditional on the attitude of academic tutors, who had to value student contributions in order to facilitate these changes.

> "it is about equal respect for other people's views but not just embracing them in this kind of you know self-esteem Americanised thing where oh you're wonderful, you know you've written a line. Not in that way but in a worthwhile way." (Maggie, Education)

There was awareness that motivational and self-esteem issues have been ridiculed in the past. Some scholars (Seligman, 1993; Stout, 2000) have portrayed self-belief based approaches as irrelevant and 'dumbing down', but meta-analysis has shown these factors to be influential on academic outcomes when operationalised, controlled and investigated with research (Valentine et al., 2004).

Established writers such as the academics themselves were expected to have confidence in their own writing and to have gone through a developmental process to gain this confidence. Students were perceived to lack confidence and the desire to improve their writing, which was understood to hamper development into an authorial writer. In addition, academics identified confidence in other domains apart from writing to affect authorial identity, such as thinking. Confidence was understood as an important feature of an authorial writer; these reflect similar findings in relation to students, who understood 'confidence in writing' as influential on authorial identity (Pittam et al., 2009).

Valuing writing

Writing ability was associated with authorial identity because academics shared an understanding that it was valuable. This manifested in the way that academics valued their own writing abilities and associated these abilities with their own authorial identity. Academics believed that students needed to develop their writing and that having good writing skills was considered to be a prerequisite for development as an authorial writer. The level of writing required to meet assessment criteria in higher education contexts has been shown to require complex interrelated skills in previous research (Elander et al., 2006). Academics suggested that students did not appreciate these skills and this was a barrier to students becoming authorial writers. Writing of all forms was conceptualised as holding value to academics, even when the writer had doubts about the quality of the product of the writing. For example:

> "I even wrote some not really good pieces of fiction, well bad pieces. … but the actual writing of those words mattered to me." (Damian, Psychology)

> "I think from being a young man I've had an ambition to write, to write to be published, so, and it's, that's why I've done such a variety of work whether academic or popular." (Lucas, History)

> "I'm definitely keen for people to think about what they've, what they've written and how they express themselves in it." (Trina, Marketing and Business)

This was not just a shared view among academics with a keen interest in writing; others were aware that their writing ability was a target of development.

> I'm in a developing role at the moment to try and enhance my writing skills. (Ryan, Nursing and Healthcare)

This attitude was also expressed in disciplines that commonly used other mediums of communication, such as music, mathematics and sciences:

> "They are quite important, because we must have good presentation skills with good language presentation right from very simple sentence of presenting the idea down to the actual mathematics, down to the further derivation of these concepts and also proof of the steps of proof involved in the work. So it's quite an extensive skill that you need to know right from language to technology and missing any of that, the essay could be a disaster." (Chun Kit, Mathematics)

> "I've always written in a way that I think is expressive. I think that there is a relationship to my personal creativity as a musician, as a composer." (Dominic, Music)

> "Very important. As a subject area we instigate from day one almost, referencing and writing style." (Sarah, Biological sciences)

Good writing ability was also valued from the perspective of reading articles; this was interpreted as a feature of the writer's authorial identity.

> "you do have some sense of that person being there, or if it's just beautiful academic writing you know, you have a sense of gratitude for that person." (Jamie, Engineering)

Academics felt that writing ability should be valued highly by students and described it as one of the most important skills that students needed to be successful in the higher education context.

> "the number one skill if you want to get a good degree is being able to write a good essay and if you can't do that I think at any programme at this university, you're gonna [sic] struggle." (Jackson, Education)

> "we really like students to pay a lot of attention to their writing skill and as well as the mathematics." (Chun Kit, Mathematics)

Successfully improving writing ability of students was seen as an important aim because of the perceived impact on students outside of the higher education context.

> "you're going to be mixing with other graduates, it's a graduate discipline and if you can't spell and you can't construct a sentence, people will notice and they may not say it to your face but they'll talk about it behind your back." (Trina, Business and Marketing)

> "you would have to be able to put your ideas on paper and be able develop the ideas in a, you know, coherent set of language and submit the project proposals you know to try and get funding and you know if the student cannot even do these sort of things in their writing there is no chance

> they're able to bring the idea to fruitions and sort of be able to carry out big responsibilities in in [sic] their job." (Tak Wing, Engineering)

> "an engineer who goes around actually taking pride in their communication skills through writing, that's a benefit and it benefit[s] their work." (Jamie, Engineering)

Despite the importance of writing ability to academics, many of them complained that their students did not share these attitudes. When comparing their own views on authorship and writing ability to perceived student attitudes, they expressed disappointment:

> "They seem less convinced than I hoped they would be." (Gordon, Philosophy)

> "they see that presenting language is not so important, but I think we see this as very important, particularly in mathematics, because apart from showing the equation, you really need to discuss the concepts." (Chun Kit, Mathematics)

These attitudes were perceived to be prevalent despite the efforts of academics to change student values in relation to writing, and it was felt that students did not understand the importance of writing ability outside of the university context.

> "practice will be their focus for most of the rest of their working life, so it's perhaps not important to them, for what they're going to do…I very strongly see that they should take it seriously; I think most of my colleagues do." (Robin, Nursing and Healthcare)

Jessen and Elander (2009) suggested that students in further education were more confident that they understood assessment criteria than those in higher education, even though they were actually more prone to misinterpreting the criteria. Academics also had concerns about the overconfidence of students entering higher education, and suggested that students ignored skills teaching due to this:

> "they'll think: 'well I know how to write an essay, it has a beginning a middle and an end', and I think that things like referencing and citations and teaching them to do that is no good doing it in the first semester, in week one. … they don't understand why they need to know how to construct an essay, like why is it different now to what it was? Why is, why do I need to know about these references, why do we need to know about the library." (Natalie, Psychology)

If students start higher education with the belief that their writing ability is at the required level they need, they are unlikely to be concerned with improving their writing skills. In addition to this, academics suggested that students were unaware of the need to develop some skills related to writing.

> "they're not making an effort learn them because I don't think it's ever occurred to them: the things that they have to do; to learn skills to do stuff is something they have to do." (Liam, Philosophy)

> "if they don't have the … I would describe it as perspective. Skills themselves don't make sense. Just one, for instance referencing. Okay you can teach it as a kind of rote activity, but if the students don't have the perspective of why on earth this is important then it's not going to happen." (Damian, Psychology)

In addition to the understanding that students were not aware of the need to improve skills, academics suggested that there was a deficiency of writing skills in students entering university. When asked about the difficulties they had with encouraging authorial identity in students, they proposed that there was a declining trend in the writing ability of students when they began their higher education studies:

> "you look at the way they write essays, it does make me question how A levels are being taught. It really really does. When I did my A levels I did English literature, History and Biology so I had a good science background but also a good background in the arts, in writing essays, being able to write an introduction, a structured essay and a conclusion,

> and I think students are losing that skill. They're coming into university and they've not got the skills of just sitting and writing a well-structured essay." (Naomi, Psychology)

> "they've perhaps somewhere along the line of their education missed out on some of these points of essay writing and how to express yourself more clearly, building up vocabulary and things like that." (Lucas, History)

Wider cultural issues were also discussed as barriers to developing writing ability in students; academics suggested that some students did not understand how the long process of developing their writing would be worthwhile, because developing authorial identity would not immediately result in better marks. These problems were described as specifically relating to authorial identity and writing one's own work.

> "what is worthwhile in higher education requires the person concerned to make some deferment; you know I might not do very well writing this essay exactly as I see it now in my own authorial voice and so on and so forth. But I recognise that Rome wasn't built in a day, it is going to take lots and lots of practice before I become a good writer ... The competition between the immediacy of modern technology and the patient acquisition of skills and personal development that traditionally goes with education, that contrast is, it seems to me, to be very stark." (Gordon, Philosophy)

> "some of them realise that actually this is a really important skill, no matter what they want to go on and do. Erm, but I don't think they all realise that and I think because writing stuff yourself, in a sense it's a risk 'cos what you write might be rubbish and it's only through practice that you'll be able to write something good. So some of them I think try it out and realise they're getting worse marks because they haven't quite got to grips with it, so they'll just go back to doing it the easy way and get a kind of average mark." (Kareena, Philosophy)

Writing ability was considered to improve as students progressed through a degree. Academics interpreted improvements in grammar as evidence that students took more care

over their work; in addition, academics believed that student progression included proof reading their work more when writing. For example:

> "They make sure that their grammar is better, they proof read more often, obviously check their spelling, but I think they gain more refinement in how to construct an argument as well." (Stuart, Psychology)

The belief that proof reading is important suggests that writing improvement is not just measured by tutors in terms of skill improvement, but also by salient behaviour changes that could be attributed to changes in attitude. The process of reviewing and revising written work has been described as an essential part of development from novice to expert writer by Becker (2006). More regular use of reviewing has been suggested to build maturity in writing and initiate discovery (Becker, 2006) indicating that it is important in the development of an authorial writer. Despite this development, some academics were concerned that students undervalued academic writing, even at late stages of their undergraduate careers.

> "Far too many of ours have academic writing at arm's length right until the very late stages. Even to the start of final year project work and every year at the start of the year." (Dominic, Music)

Valuing writing skills was perceived to be an important issue in relation to authorship and students' development towards becoming more authorial was associated with writing skills, but only if the skills were valued by the students. It was suggested that this should be done with attempts to inculcate similar values to those held by academics. Critical views of current writing instruction were also revealed in this subtheme, at further education and higher education levels, particularly surrounding mechanical teaching of skills.

Ownership and attachment

Recognising ownership of written work and feeling attachment to one's own written pieces was understood as a defining feature of an authorial writer. Academics understood writers to be the rightful owners of pieces that they had composed; this was considered to be important for both their own pieces and for the academic writing of students. Academics considered students to be the owners of their written assignments but believed that students tended not to feel ownership or attachment to their work.

Ownership was understood as closely linked to authorship and the two concepts were considered to be synonymous at times:

> "I think authorship and ownership do go together, very much so." (Natalie, Psychology)

> "I think its ownership, I think it's kind of having an overview of the whole thing." (Maggie, Education)

> "an author is somebody who erm, who presents either in a written form or an oral form, I think you can be an oral author, an argument or an idea, or a concept of something and it needs to be theirs as well, there needs to be an ownership of it because otherwise, it's just regurgitation of somebody else's notion." (Amy, History)

Academics recognised their ownership of pieces they had written and used this to clearly identify their authorship of them. There was a tendency to discuss ownership as a feeling linked with attachment. This suggested that a writer's ownership of a piece is a personal and subjective experience. For example:

> "I am the author [*and*] I feel my attachment to it." (Stuart, Psychology)

> "it's the ones that I feel that I've instigated and I'm doing that I feel that ownership and it's that ownership then blesses me with the authorial identity." (Charlene, Business and Marketing)

> "For me authorship means having [...] My interpretation of that is in terms of the level of pride you have in the end result." (Dominic, Music)

The academics' attachments to their writing were clear when discussing pieces they had written. For example, academics explained how defensive they could be about their own work in the face of an editor's comments:

> "I think it remains mine, I wouldn't change it to any great extent if I wasn't comfortable with that change, I would argue and say no, that's not what its intended to do and if you don't like it you know I'm not changing it." (Maggie, Education)

Another example of this was expressed when an academic described how students misquoted his writing. Reflecting on his own text reinforced self-beliefs, particularly in relation to his own development and credibility as an academic:

> "marking student's work where you're being quoted, you know, and particularly if they quote you wrong, erm [...] so in a way it is important, the kind of sense of being an author and how that makes me feel, and I suppose it makes me feel that I've kind of, erm [...] paid my dues as it were, you know, I have produced something, you know which is a credible piece of work." (Anthony, Education)

Academics' sense of ownership arose from composition of the text; this was considered fundamental for authorship of a piece. Being named as an author of a publication without contributing to the written manuscript was not enough to invoke feelings of ownership and authorship.

> "This authorial identity and, and it made me realise how important it was for me; the actual process of writing. Like, like if there is a paper to which my name is attached, I think I would feel very uncomfortable if it wasn't me writing it." (Damian, Psychology)

When asked whether they had a sense of themselves as authors when they reflected on individual pieces of writing, academics felt ownership of them and associated their authorial identity with being accountable and responsible for the text, even after a piece had been rejected for publication.

> "the level of ownership and authorship all along has been […] So for instance pieces I don't get published but which I still think are quite good and for whatever reason might not have been published, maybe there's

> only one place it could have gone, they still go up [*on*] your net [personal website] and I go 'I wrote that, you can leave that and you can pin those words on me'." (Liam, Philosophy)

> "even if you sort of look back at it and maybe think you would have done it quite differently, it is still a record of what you did at a particular time so you know I think you know that there'd still be quite a strong sense of ownership there." (Arthur, Philosophy)

Academics also associated ownership with authorial identity when discussing students as writers, and felt that it was particularly important when discussing plagiarism. Academics perceived students to be the owners of their assignments and held them responsible for their writing. For example:

> "I do think they're still the author because they still have to go and find those things and put them into some kind of order. Even if it's not a very good order, they've still done that and I think you know you get two people that have done exactly that and they'll still come up with very different essays and I think they created it whether its good or bad." (Natalie, Psychology)

Even if plagiarism occurred, the rest of the written work was understood to belong to the student:

> "Maybe they even think that they've put it in their own words but they've actually copied it word for word. I still think on the whole, assuming that's a relatively isolated part of an essay, they still have ownership, they still have […] it is their piece of work but that bit isn't. That bit is somebody else's piece of work that they've put in and I think that's the key." (Stuart, Psychology)

A desire to take ownership of one's written work was perceived to be an indicator that a student writer would be less likely to plagiarise. This attitude was expressed when discussing plagiarism specifically:

> "we don't see that many of them actually, but that type of student who does do poor big plagiarism: the copy and paste and the re-type plagiarism, they tend to be somebody who hasn't developed that sense of ownership of their own work." (Amy, History)

> "my sense is that the students that plagiarise don't have a sense of ownership." (Geoff, Philosophy)

Encouraging students to take ownership of their written work was suggested to have positive pedagogical benefits and some academics suggested that it would reduce student plagiarism.

> "if we can crack this idea of turning students into authors and gaining that ownership and that pleasure in writing, erm, and that confidence in writing, that it just reduces the need for plagiarism because I don't think students sort of think: 'I'll plagiarise because it's easy or it's a cop out or whatever.'" (Charlene, Business and Marketing)

Other academics had not considered these issues and suggested that the relationship between ownership, authorial identity and plagiarism was something that they overlooked with their students.

> "we talk about referencing as a way to avoid things like plagiarism but I don't think that I ever really talk about it in terms of authorial identity of owning something, of ownership." (Elaine, Languages)

Authorial writers were expected to take ownership of their writing and concerns were raised that students were not encouraged to take ownership as a method of reducing plagiarism. Previous research has suggested that the context of writing instruction can encourage students to adopt writing strategies more likely to result in plagiarism (Abasi & Akbari, 2008). Keys (1999) has also suggested that encouraging school students to take personal ownership of their investigations was important for writing development in scientific genres, but the link between ownership and scientific writing at undergraduate level has not been investigated. Horner (1997) has accused universities of marginalising student writers and

creating a binary author/ student writer classification. Academics in this study believed that the message to students during teaching at higher education level was not clear regarding ownership.

> "one of the first things that they're told is you take the I out, so you don't talk about [...] that you don't put your I in, you know, you have a critical distance and you talk about the essay as if it's sort of a loose object that isn't attached to you in any way." (Elaine, Languages)

> "I don't think we give them much room to be able to take ownership, maybe they don't realise they can, maybe that's one of the problems." (Natalie, Psychology)

In addition, academics compared their own authorial identity to the way that students associated with their work; they expressed concerns that students were less likely to feel attached to their writing.

> "authorship with me as well is about, I don't know, like I said, about it being part of you, it's almost like a love and care that you give to this essay that you write and I don't know that students necessarily either have the time to be that precious about the work, although they should be, or whether they love it that much." (Elaine, Languages)

They also had concerns about students' ability to take ownership of source material, particularly in the context of independent study. Students were described as being reluctant to take ownership of ideas from the literature and express them in their own writing:

> "they think what we want is a report of stuff and they don't see that we want them to be, you know, to take ownership of the ideas." (Kareena, Philosophy)

> "if they don't identify the text to themselves that means they've lost that link. They won't take pride on every word they put down on paper so therefore it is matter of reinforcing that message; that whatever you have

> written is your individual thought, individual expressions of understanding and demonstrations of what you know. So, I don't think many of them, when they submit a report to me, have any you know identification of themselves to the piece of work." (Tak Wing, Engineering)

When academics described students with authorial identity they suggested that it was associated with feelings of duty, responsibility and pride, similar to accounts of their own work:

> "I think that sense of yourself as an author in the writing as a student takes a lot of time to develop. I don't think it's something that students would come in with and I think many students would never, would never get that sense but I think some students probably would as they develop and as they start to become […] you know and do work that they're proud of as well." (Naomi, Psychology)

> "They're proud of what they've done and they want to share that with other people." (Amy, History)

> "I'm kind of considering where the students [*are*] coming from and they are in fact, potentially the authors of this work and they should feel proud and I'm just starting to give them that, this is what you're doing, it's your work, you know, wow me with it, make me enjoy reading it." (Janet, Nursing and Healthcare)

Ownership was conceptualised as a positive aim for instruction that was strongly associated with authorial identity. Some academics expressed concerns about higher education assessment practices discouraging ownership of work; however, others reflected on positive examples of authorial identity and ownership that they had seen in student writing:

> "it was such a good piece of work that I felt like it really was owned by that person and I thought it was above and beyond a level of an undergraduate essay." (Sarah, Biological sciences)

Taking ownership of language has been identified as an important component of identity for English as a Second Language (ESOL) students (Chiang & Schmida, 2002), but little attention has been paid to this concept when examining native speakers. It has been suggested that students learning to write in their academic disciplines are learning a discourse that is alien to them (Lea & Street, 1998; Clark & Ivanic, 1997; Ivanic, 1998). The academics in this study identified many of the issues experienced by ESOL students and perceived them to be present when English speaking students are learning to write in these new discourses. Students with authorial identity were conceptualised as writers who took pride in their work and were attached to the arguments they presented.

Authorial thinking

This subtheme concerns the way that an authorial writer thinks and how these thoughts are characterised as making a writer authorial. Forms of thinking have been examined in relation to writing ability by many researchers (Lindsay, 2011; Oatley & Djikic, 2008; Langer & Applebee, 1987), but the link between authorial identity and types of thinking has not been explored. In the current study, thinking was understood by academics to be influential on authorial identity, but which aspects of thinking were important was dependent on the level at which they wrote. Academics were considered to be authorial writers when their thinking was free, creative and distinctive. The thinking of authorial student writers was described as critical, logical, clear and independent. Writing has been considered to be closely related to thinking and Condon and Kelly-Riley (2004) have suggested that the two are sometimes inaccurately equated as the same activity. Some academics considered their authorial identity as inextricably linked to their thought processes:

> "when I'm thinking I'm actually thinking in written form. So, in my own mind I am formulating a couple of sentences which I would write down about what I'm thinking, so the ability to think, to give a bit of thought and then to cast a beautifully structured sentence, paragraph, page, chapter, is what one longs to do and I feel a strong identity with that." (Jamie, Engineering)

Academics understood writing as an expression of their thinking that was disseminated to peers. They considered the reader and the way that their thinking would be perceived by the intended audience:

> "I'd want them to know that this, the human being that's written it is a kind of, erm, thinking, reasoning person." (Anthony, Education)

> "I am the author of that work and I'm the one that makes all the changes to the work and it's my thinking that creates it." (Natalie, Psychology)

When asked whether authorial identity was important when writing, academics described it as a medium for expressing one's thinking:

> "the issue of the author's presence is quite important and I think every author who is writing something ought to be fully aware they want [*to*] project presence of their thinking in the text." (Tak Wing, Engineering)

> "it's the information you decide to put in it and the order you decide to put that information in and how you defend your propositions and justify your suggestions. That shows your thought processes and that is part of your authorial identity, it's how you thought about it." (Trina, Business and Marketing)

In addition to presenting one's thinking, authorial identity was understood to facilitate thinking; for example, one academic suggested that authorial identity allowed him to explore and develop ideas with his writing:

> "write to generate ideas not just to document them. I've got into the habit of that, you set off in a particular direction and you suddenly realise that you have got something to say but it isn't in the sentence that you're writing so then you go somewhere else." (Dominic, Music)

Academics understood written text as a direct expression of an author's thinking and this extended to their experience as readers of academic work. Many of them reflected on the perceived thoughts underlying texts they read; they made judgements about the intellect and personality of writers based on the authorial identity that they detected.

> "there are certain analytic philosophers whose work just bores people, bores me to death you know. But maybe that is not because there isn't a presence, maybe it is because you know they are just boring thinkers so maybe they are present and it is that that is just boring you." (Arthur, Philosophy)

> "I think that strength of voice comes with the intellectual ability and flexibility of mind if you like." (Jackson, Education)

> "I would look at, um, a much larger body of their work in order to get a greater sense of their ideas, where they [*are*] coming from, their directions, um, the ideas that that author is working with, um, because if you read something, one paper by someone, typically you are going to miss a lot of their thinking, a lot of the structure that's in there, um, and so from the point of view of the author being the issuer of ideas." (Geoff, Philosophy)

Specific types of thinking were understood to be crucial for an authorial writer. When the thinking in a written piece was perceived as not being distinctive, the writer of that piece was considered to not qualify as an authorial writer. This suggests that distinctive thinking is a prerequisite for an authorial writer. This was evident in a description of articles written by peers who lacked authorial identity:

> "I just don't see many signs of actual people writing those papers. I mean the thoughts are obviously theirs. … I think they are absolutely interchangeable. I'm talking about the style of writing and perhaps even the way of formulating thoughts." (Damian, Psychology)

Freedom and distinctiveness of thinking were characteristics considered applicable to authorial writers writing for journal articles. These were given as defining characteristics when asked for an example of an authorial writer:

> "I'm reading Freud and it just seems to be that although Freud was quite orthodox in his conception of science and his style is sometimes very irritating, but on the other hand he had this freedom, which was both writing

> and thinking as well … [*He is*] Perhaps the primest [sic] example for me in psychology. Absolutely." (Damian, Psychology)

Creative thinking was another type of thinking that was understood to be important for an authorial writer to have. For example, when asked to describe the elements of writing that showed authorial identity, one academic referred to creativity:

> "I think that that expression of self and that expression of creativity is a truly fundamental part of a piece of work, it's not necessarily just a mere summary and I do sometimes get frustrated at the prospect or the proposal that science isn't necessarily very creative." (Stuart, Psychology)

Creative, free and distinctive thinking were considered as important for authorial academics. Some academics suggested that teaching students to write with authorial identity was an integral part of their jobs; for example, one academic linked authorial identity to teaching students how to think:

> "that's part of our job isn't it if we're teaching people how to write, how to think" (Lucas, History)

Different elements of thinking were important when discussing the typical student writer with authorial identity. The thinking that was understood as important for an authorial student to have was characterised as being logical and clear.

> "you get the students that have gone away, done the reading and constructed some kind of sensible this is where this goes, this is my thinking. You can see that it's thought through, things follow sensibly." (Natalie, Psychology)

> "I think the best ones are those where, their point is clear and you can identify the key issues quite well and that you can, you can see their thinking and their research that, and as a result of this, these are my conclusions." (Anthony, Education)

Academics described writing by students without authorial identity as pieces with a lack of thinking or unclear thinking:

> "Sometimes you read pieces of work and mark them where it just seems to be one reference after another and almost just looks like a list of references and a list of studies with no real arguments in there. No real thought from the student about what those studies mean." (Naomi, Psychology)

> "students who hide their, their brilliance, hide their intelligence behind thrusting model after model at me and jargon and academic talk, and making their sentences longer and trying to shove everything in to show that they know it, rather than just telling me what they think." (Trina, Business and Marketing)

Some academics could match pieces of student work with their authors when the writing was unclear, suggesting that they could recognise the student's thinking in text form.

> "Those students who did not write particularly well, you can also identify them so we seem to sense that this must come from this person because the explanation is not clear or something is wrong with the explanation and we seem to think of this student for some reason." (Chun Kit, Mathematics)

Unclear thinking was also described as an element of work where students were highly visible; in one example too much authorial identity was considered to cause a lack of clarity that was detrimental to the quality of student writing:

> "it seems to me that if I read a really, really bad piece of work, more often than not the author is very visible… and it's, it's very hard to actually discern the academic content, it's all very much 'here's me thinking' and it's all very unstructured incoherent and there's no […] you can't see the philosophy for them, they're so confused at this point." (Geoff, Philosophy)

Clarity of thought was detectable in student writing and academics used this to make judgements on the way that students had engaged with writing tasks. Issues with thinking were conceptualised as a major barrier to becoming an authorial writer.

Critical thinking ability is a desirable outcome of education (Kuhn, 1999). It has been suggested that writing and critical thinking are inextricably linked, and that improvement of critical thinking can be achieved through written exercises (Wade, 1995). Academics also understood critical thinking ability as something that they aimed to improve; this was linked to independent thinking and ownership of ideas.

> "we want them to have some critical distance between what they said and what they say in the essay and so that they're providing some sort of commentary on it and erm, you know coming up with their own ideas and ways to link the materials, some perspective on it, which should be apparent in what they write." (Kareena, Philosophy)

It was suggested that authorial identity in student writing demonstrated critical thinking; for example, when asked to describe student work with authorial identity, one academic described the way that authorial identity could be detected:

> "you can hear them having an internal debate." (Sarah, Biological sciences)

Student writing was understood to lack authorial identity because ideas from source texts were presented without discernible contributions from the students' thinking. Participants repeatedly mentioned that thinking needed to originate from the writer; students' *own thinking* was considered to be important, particularly when describing the relationship between student writing, authorial identity and their use of sources:

> "Poorly constructed ones go from source to source, well constructed ones where there's obviously been some internal synthesis, go from point to point and will make reference back and forth to different authors. In other words, they're not being steered by the process they're going through. They're being steered by their thinking as they go through that process." (Dominic, Music)

Although input from students' thinking was valued in relation to authorial identity, academics cautioned that this was mediated by the clarity and organisation of these ideas when presented in student writing:

> "a person may be highly independent but incapable of organising the ideas that they are supposed to be covering in a coherent structure such that you are going to follow their reasoning." (Gordon, Philosophy)

When asked to describe work with strong authorial identity, academics cited examples where the students' thinking processes were visible and suitable:

> "There are a few very good project students and when you see the writing, you will definitely see that oh this is him. So there are a few of these when I was marking projects, so I can see through the project writing and see through the way that they present the idea." (Chun Kit, Mathematics)

> "the students who have been forced to revisit and re-think their ideas and engage with the community, write better. They've thought things through; they've got more, more sensitivity to the dialect." (Geoff, Philosophy)

The thinking that was valued as authorial at the level of the participants was characterised as free, distinctive and creative. Academics expected authorial writers to have thought carefully about their writing. Logical, clear, critical and independent thinking were understood to be indicators of authorial identity in students. Students were perceived as having difficulties with these types of thinking and this was observed to have a detrimental effect on their authorship. The different understandings of authorial students and authorial academics may arise from assumptions that academics think logically, clearly and critically; these types of thinking are prerequisites for becoming professional academics so they are perceived as something that they and their peers already actively engage in, so advanced features of independent thinking are influential on authorial identity at this level.

Authorial goals

Academics suggested that authorial identity could be linked with having specific rhetorical goals. In particular, they understood consideration of the audience and the objectives of a piece to be important when composing their own work; however, they perceived a lack of attention to these issues in student writing. This was related to concerns about wider student goals in higher education and academics claimed that these overshadowed the communicative objectives of extended writing; they understood students to be focused on instrumental concerns relating to assessment and employment rather than communicating an argument to an audience.

Analysis revealed that the degree of authorial identity a writer had was influenced by how well they communicated with the reader and their intended audience. Having a strong message and the ability to persuasively communicate this message in writing was understood to be a requirement for writing as an author:

> "for any piece of writing, having a sense not only of yourself, but a sense of audience is really important." (Anthony, Education)

> "it's important that its read by a whole range of people from medical professions and other psychologists but also people that I'm researching." (Naomi, Psychology)

> "I actually do myself very very strongly make that author comparison, because it's about audience, it's about who's the audience going to be … what am I trying to convey, what do I want to say." (Richard, Psychology)

The importance of considering the audience has been investigated in relation to academic writing (Kroll, 1984), but consideration of audience has not been investigated in relation to authorial identity. Setting suitable goals has been acknowledged as an important part of the writing process that is included in the planning stage of Flower and Hayes' (1980) cognitive process model of writing. When writing, academics were aware of the objectives associated with each writing task and carefully considered these in relation to the way that a piece should communicate.

> "for me it is always good to have something to write because that means I have always got something to think about with a specific goal in mind." (Arthur, Philosophy)

Communication was also important for academics as readers. When asked to describe articles with authorial identity, they were described as pieces where the message to be communicated was clearly stated.

> "In the better academic articles, from the beginning the person is there, is visible in the research, announces that, owns it and you have an argument kind of following like a train. You know it's kind of all chicka chick chicka [[impression of a train]], all going in one direction. You get there and you're convinced." (Maggie, Education)

In addition to rhetorical goals focusing on communication, academics suggested that there were instrumental goals related to their writing. When asked about their own authorial identity, academics associated this closely with publishing research and the career pressures from this aspect of academia:

> "professionally I suppose I do think of myself as an author because I have to you know just in terms of the institution and the things you are expected to do." (Arthur, Philosophy)

> "Well publishing papers is an important component of our academic career. So we have to publish papers and whether it is related to particular authorial appearance. That probably is not the most important thing." (Chun Kit, Mathematics)

> "being aware of my own voice is important to me, and so, um when I was originally publishing coming into the discipline it was very much a case of publish or don't get a job." (Geoff, Philosophy)

Academics who rarely published research were also aware of the significance attached to publishing; this was understood to be important for maintaining an identity within the academic community.

> "for me personally it is only a part of my sense of identity within the academic community. I imagine for other people it is a bigger part because they have got more extensive publications and they may be known more widely in the academic community by their publications." (Gordon, Philosophy)

Although instrumental goals influenced authorial identity in academics, they also emphasised the importance of publishing and disseminating articles to facilitate academic debate within their communities.

> "when you are writing something you are conscious that am I making some degree of contribution in the area of interest and also whether this will lead to further work." (Tak Wing, Engineering)

It was suggested that students did not appreciate this communicative aspect of writing. This was attributed to epistemological naivety and a failure to appreciate critical feedback of peers as desirable.

> "as academics part of what we do if we write articles for publication, is we put them out there to be criticised. You know, that's what they're published for isn't it, they're published in order to invite people's comments and feedback, but they, sometimes I think students perceive them as being published because that's the truth." (Robin, Nursing and Healthcare)

Attention to the rhetorical objectives of writing was understood to facilitate student development; writing that included communication of a strong clear message was viewed as favourable to academics.

> "if somebody's obviously got a sense of themselves, a sense of their opinion and a sense of they've directed me to where they want to take me I really

> like that and I do give them better marks than people who have given me a list of facts." (Sarah, Biological sciences)

This impact was perceived to extend outside of academia and higher education, suggesting that academics understood development of students into authorial writers as a desirable outcome for employability:

> "this idea of being the author and understanding your audience and what being an author means in terms of the writing that you do is outside of just the academic domain, it's broader, much much broader than that." (Richard, Psychology)

> "if they don't stay on in academia when will they ever have to write an essay again? [*They think:*] 'I'm not gonna [sic] have to write an essay', whereas actually if you transfer that or translate it into some kind of well actually write a report for this audience, do this for this audience, think about your audience, maybe getting them to be a bit more applied in who are they writing to, how do they need to adjust that writing?" (Natalie, Psychology)

Researchers from the Writing Across the Curriculum (WAC) movement have advocated this approach as part of writing centre pedagogy; for example, Fulwiler (1984) reported setting assignments for different audiences as a method with positive effects when evaluating the writing centre at Michigan Tech. When asked to describe typical examples of student writing with weak authorial identity, academics referred to students that failed to communicate clearly to them as readers:

> "if they're not able to communicate in their writing very well, they're not able to communicate their identity either." (Trina, Business and Marketing)

Some of these problems were attributed to students imitating the voice of established academic authors; this was understood to impact on students' authorial identity, because they were attempting to project identities that were not their own. Academics described situations where they had to explicitly discuss writing as an activity with communicative goals:

> "you're sitting there going: 'no this is definitely what we don't want you to do, we want you to convey this information to us in a very simple form.'" (Liam, Philosophy)

> "imagine that you are having a conversation with a friend or your gran. Sometimes I say: 'explain to me as if you are explaining these things to your grandmother, don't adopt all the technical terminology and try to sound like a professor when you're not a professor.'" (Gordon, Philosophy)

The lack of rhetorical goals in student writing can be contrasted with the communicative goals of academics as expert writers in this context; this suggests that students should be encouraged to set goals focused on communication, to facilitate their progression from novice academic writers into expert writers. It was suggested that students were not aware of the communicative aspects of writing because they wrote almost exclusively for their tutors and their goal was to achieve higher grades.

> "It has a point, but again I get the impression that as far as students are concerned the point is that they are being assessed." (Dominic, Music)

The issue of assessment-based writing objectives was linked to a salient perception that students had instrumental goals for attending university.

> "I think a lot of them, they see the written work as a means to an end to get themselves a qualification which means that they will probably [...] practice will be their focus for most of the rest of their working life, so it's perhaps not important to them, for what they're going to do." (Robin, Nursing and Healthcare)

> "I am not so sure what we can do about the biggest barrier in all of this, I mean I think the instrumental attitudes that people have to education, short-termism with respect to study and so forth." (Gordon, Philosophy)

Instrumental goals prevented students from developing advanced writing practices in some disciplines; for example, a law academic described writing with authorial identity in his discipline as difficult to learn, and suggested that assessment goals discouraged students from attempting to write in this way:

> "it's quite a complex thing to master, because if you misrepresent the views of someone in an unsupportable way, this is a catastrophic risk, so most law students are risk averse, they'd much rather just represent the views, of the legal thinker etcetera, than mitigate that risk, they just want to pass" (Stanley, Law)

Social psychology research has differentiated between performance goals and learning goals as mediators of educational achievement; performance goals have been associated with motivational problems, whereas learning goals have been shown to facilitate determination in the face of challenging tasks (Dweck, 2000). Recent research has shown that organisational culture impacts the goals, motivation and behaviour of group members (Murphy & Dweck, 2010). This suggests that the underlying cultures of universities influence the goals and motivation of students. Academics described students' grade oriented goals as performance goals related to the demonstration of ability rather than the improvement of learning. These instrumental goals were framed negatively and understood as barriers to developing authorial identity in students; the effect of these goals was seen as conflicting with the goals of higher education.

> "They're ruthless. [*They think:*] 'We're paying for this, I've got to get a good grade, besides I've got to pick the kids up and I've got 20 hours of part time work. Tell me what to do.' Whereas we want them to go through a period of confusion, not confusion but we want them to have the realisation of the point they are going to make themselves, rather than us make it for them and that's a really difficult issue." (Dominic, Music)

The desire to achieve these instrumental goals was conceptualised as damaging to students' authorial identity. Greater variation in the written assessments used within higher education was suggested as a way to encourage consideration of audience and message in students:

> "I'd like to see a mixture of the academic work and more applied ways of writing, thinking of your different audiences." (Trina, Business & Marketing)

> "whatever course a student's on, it would be a good exercise, you know, for them to [...] present their assignments sometimes in different ways, for different audiences and purposes. (Anthony, Education)

Academics understood the setting of suitable goals to be associated with authorial identity, suggesting that encouraging students to set rhetorical goals should be part of writing instruction. Cognitive psychologists have suggested a link between the use of goals and successful planning when writing. Kellogg (1994) highlights it as one of the differentiating features between expert and novice writers. In the academics, who are expert writers in this context, the subtheme referred to awareness of the rhetorical and communicative objectives of individual writing tasks. Instrumental concerns were not considered to be problematic for academics and their peers, because career pressures were not perceived to be the only motivation; a communicative element that facilitated discussion within a community was emphasised by academics in relation to publishing articles. When conceptualising the issue of student goals, academics were concerned about the damaging impact of instrumental goals on student integrity and authorial identity. This raises the possibility that junior scholarly communities could be used to facilitate understanding of writing as a form of communication rather than purely as a form of assessment. As Kroll (1984, pp. 173) states "While this kind of traditional advice may seem self-evident to experienced writers, the novice may not have learned how to think systematically about the intended audience for a composition." Recent research has shown that organisational cultures affect the goals prioritised by group members (Murphy & Dweck, 2010), suggesting that institutions could take positive measures to emphasise communicative aspects of writing. There were concerns about students only writing for assessment, with academics suggesting that it was difficult to draw attention to the communicative aspects of academic writing because of grade-oriented writing goals. Recommendations to include a greater variety of assessment were also expressed by academics who felt that this would facilitate use of rhetorical goals.

Integrative themes

In addition to the subthemes related to an authorial writer, two integrative themes were identified in the analysis; these were interpreted as understandings of authorial identity that underlie all of the other themes discussed above. These two integrative themes were 'tacit knowledge' and 'negotiation of identities'. Both of these themes emphasise the importance of academic communities for developing the characteristics of an authorial writer.

Tacit knowledge

Tacit knowledge can be directly contrasted with explicit knowledge that is easily codified and managed; Elliot et al. (2011) outlined three salient features of tacit knowledge: it is acquired without a great deal of instruction from experts, it relates to procedural information for specific contexts, and applications of this knowledge are mediated by an individual's personal goals. This theme revealed that academics understand authorial identity as a concept with these characteristics. In particular, understanding of authorship was seen to arise from practice and socialisation rather than as the result of explicit instruction. Academics observed that authorship was not reflected upon, even by professional academics:

> 'I mean I'm here now and working in academia and I've never thought of myself as an author per se. I've never, you know I've never really had that conversation with myself.' (Natalie, Psychology)

Academics reflected that their understandings of authorship did not come from explicit instruction, but as something that was tacitly acquired. For example, when asked about development of her authorial identity, one academic suggested that it came from her undergraduate studies:

> "I think as an undergrad I became aware of it… Yeah, tacitly picked up." (Elaine, Languages)

Some academics reflected on activities that they understood as influential on development of their authorial identity. These centred on social aspects of writing associated with their academic communities and engagement with these communities.

> "one of the things that comes through from this sense of authorship, if we're sort of seeing it from, you know, I have written articles, published and I have done, you know, journals and conferences and books and etcetera. Then I think that has to have an impact on identity because each time you feel that you're establishing yourself a bit more within that community." (Charlene, Business and Marketing)

> "your voice develops as a kind of […] as a […] in its kind of socially constructed." (Jackson, Education)

Professional academics typically belong to disciplinary communities that share knowledge through academic publications, conferences and collaborations. Academics in this study identified these mechanisms as important facilitators of authorial identity development. For example, presenting work to an audience was described as a way to develop authorial identity:

> "the strongest way you get a sense of self as an author is if you have to physically present it with an audience, rather than just write it." (Amy, History)

In addition, being exposed to conference presentations and articles as a member of the audience was understood as an important part of developing authorial identity. When academics were asked how their authorial identity developed, they recalled their own time as novices and reflected on their exposure to the contributions of experts.

> "my writing style is probably impacted most by conference presentations that I've seen." (Dominic, Music)

> "I remember this experience as a student myself, even if you can't understand a word that they're saying, the more that you read those articles you get into that sense of how academic authors write and then you begin to develop more and more understanding of it." (Robin, Nursing and Healthcare)

These extracts suggest authorial identity develops as part of a socialisation process that facilitates establishment of one's professional identity. Tacit knowledge transfer is characterised as a process involving socialisation of novices into a community (Eraut, 2000; Nonaka, 1994). Elton (2010, pp. 158) identified academic writing as a form of tacit knowledge learnt through "mental osmosis", and suggested that instruction should be supplemented with opportunities to practice academic writing and reflect on the task. The findings of this theme support this recommendation and suggest that authorial identity is part of academic writing that could be improved with this strategy.

In the context of an expert carrying out a specific task, explicit knowledge refers to parts of the task that the individual can easily codify into verbal instructions; whereas tacit knowledge refers to automated components that are not the focus of attention (Tsoukas, 2003). When asked to describe the process of writing with authorial identity, academics emphasised authorial identity as part of writing that was on the periphery of attention.

> "it's something that comes with practice because you have to be very good at fluently writing so that you don't think about it, it has to just come from your brain, come from your heart." (Trina, Business and Marketing)

In discussions about authorial identity, some academics echoed the concerns of Elbow (1995) and suggested that academic writing was an invisible activity.

> "it's nowhere, it's never actually told, at least at the departments I've worked at. Perhaps some, you know some skills like how to reference, but not the actual process of writing." (Damian, Psychology)

This suggests that development of authorial identity is not facilitated by an explicit mechanism. When attempting to address these issues, some academics found it difficult to identify how they improved authorial identity in students; authorial identity was described as a side effect or the result of implicit guidance:

> "in the way that I teach, you know, there is a kind of implicit guidance given about how to write." (Arthur, Philosophy)

> "having proper authorial voice really [*and*] taking ownership of the ideas is kind of a side effect of what we're asking them to do." (Kareena, Philosophy)

In one example, an academic described developing authorial identity as an indoctrination process that aimed to develop mastery of academic writing in that discipline:

> "we have to kind of indoctrinate them with that doctrine of this duality you really don't […] your opinions, your point, your voice doesn't matter, that your insights do, but that your insights come after you've mastered everything else." (Stanley, Law)

Other academics recognised tangible methods for improving authorial identity. They understood practice and exposure to facilitate improvement of authorial identity rather than explicit instruction. This reflects accounts of their own authorial identity; academics did not mention an explicit mechanism that supported development in this domain.

> "actually giving them an experience including authorial identity and like you know looking at themselves as readers and writers and they will actually write in our lesson, they'll write poetry in the lesson as well, so exploring all those sorts of different forms of communication." (Jackson, Education)

> "by repeated exposure and practice they should both recognise the value and raise their skill." (Jamie, Engineering)

> "The more they read the better they get because they start to develop that idea about what academic writing is." (Naomi, Psychology)

These activities were understood to develop attributes identified in the main theme, such as valuing writing and recognising the communicative goals of writing. It was also suggested that academics should demonstrate authorial identity; this approach was directly contrasted with skills-based approaches to writing instruction.

> "we should be demonstrating the notion of authorial identity and what does it mean to be a writer as opposed to just a look at writing skills. I think there's a huge difference between having writing skills and actually being a writer and I think a lot of that is about beliefs values and identity as well." (Jackson, Education)

Tsoukas' (2003, pp. 424) explanation of tacit knowledge suggests that "we learn to engage in practical activities through our participation in social practices, under the guidance of people who are more experienced than us." When considering current teaching practices in relation to plagiarism, it is clear that these issues are consistently overlooked; 'holistic' efforts that incorporate pedagogic aims tend to focus on improving codified knowledge about referencing (Kaposi & Dell, 2012). In addition, this theme questions the effectiveness of explicitly instructing students about authorial identity. When asked to reflect on the relationship between plagiarism and authorial identity, academics contrasted the authorial identity approach with the teaching of rules about plagiarism.

> "Not one of us tells them about a concept of authorial identity, we give them a lecture about not plagiarising, that's not the same thing at all, all we do for our students currently is we give them a session on what plagiarism is and how not to do it." (Richard, Psychology)

This suggests that developing authorial identity in students is understood as separate from explicit teaching of plagiarism regulations. Ellery (2008) has argued that facilitating students to acquire the values and attitudes of academia should be used as a method of reducing plagiarism. Academics in this study emphasised the importance of getting students to engage with the academic community to adjust their values.

> "if they feel like respected members of the community that obviously, in that sense, it'll give them more confidence and that will improve their work. It will also, we sort of suspect, mean that they'd maybe be less inclined to cheat." (Kareena, Philosophy)

The role of academic communities should not be overlooked in this context; socialisation into academic discourse communities has been associated with development of academic literacies

by sociolinguists (Duff, 2010), and research has focused on the difficulties associated with ESOL contexts (e.g., Morita, 2004). This theme raises a number of concerns about the development of authorial identity in native language students. Unfortunately, students were not perceived as novice members of the community by their lecturers; this was partly attributed to the number of students that academics had contact with.

> "I don't perceive them as junior baby academics potentially, because potentially they're going to come right through aren't they? But maybe it's because there's so many of them." (Natalie, Psychology)

This suggests that interventions targeting lecturers would facilitate development of tacit knowledge in students. The advantages of treating students as academic apprentices in the community have been identified by ESOL researchers (Belcher, 1994), but this has mainly focused on developing tacit knowledge in graduate students (Edwards & Schleicher, 2004), where supervision enables the fostering of close relationships. Academics in this study were aware of this difference and understood this to be a barrier to embracing undergraduates as part of the community.

> "maybe it's different as well when you start having a supervisor relationship rather than a I've got thirty students to teach and to do seminars with and tutorials whatever. Perhaps when it's the more one to one you can foster that relationship a bit better." (Natalie, Psychology)

There is evidence that disciplinary communities are influential on authorial identity; Hyland (2010) analysed the text of expert writers to identify techniques used to convey authorial identity. He found that academic communities and their conventions were used as rhetorical devices in expert writing, but the role of communities in developing novice writers has not been identified. According to academics in the current study, communities play an important role in developing tacit knowledge related to academic writing. When asked to suggest methods of improving authorial identity some academics cited facilitation of peer-orientated academic communities as examples of good practice.

> "he's got groups of students to write very short pieces erm, and then to peer-review and to give feedback and so that gives students more confidence as

> they learn that it's okay to give and receive feedback." (Charlene, Business and Marketing)

> "we also have encouraged the students to set up the marketing society, which will be part of a community." (Trina, Business and Marketing)

Other work on tacit knowledge has highlighted the importance of situating learners into contexts for undergraduate learning (e.g., Eraut, 2009), suggesting that students should be encouraged to experience situations faced by more experienced members of their communities. This was also proposed as a way to develop authorial identity in students.

> "you get them to do more things an academic does like doing presentations to a group or writing abstracts that might get sent to a conference, get them to do more and more of that and their confidence builds." (Naomi, Psychology)

> "we created conference papers with them etc. Erm, and I think from that point of view, some of them did very much start to feel part of that academic community." (Charlene, Business and Marketing)

Situated learning and peer communities are both recognised as important in the development of tacit knowledge. Identification of authorial identity as a form of tacit knowledge suggests that alternative forms of authorial identity pedagogy should be explored; not just those that use explicit instruction. This conceptualisation of academic writing as tacit knowledge (Elton, 2010) may explain the difficulties associated with teaching students to write with explicit methods. For example, one academic recalled the response from students after attempting to explain his own approach to writing:

> "you get a rolling of eyes and I haven't lit them up to the possibilities of this, I've made them feel it's even more distant, it's you know, it feels like I've proverbly [sic] said well look if you really want to build a brick wall it's a lot easier if you fly and drop them in, you know." (Dominic, Music)

Development of peer communities could be a feasible method of improving authorial identity, and for other elements of academic writing that are implicit and difficult to codify. This would allow students to reflect on work of a similar level to their own and situate their writing experiences. In addition, it would allow them to learn about authorial identity from the perspective of a reader. One important issue regarding authorial identity that has not been addressed is how academics understand detection of authorial identity. Although research using textual analysis suggests that uses of the first-person pronoun are a visible indicator of authorial identity (e.g., Hyland, 2002; Tang & John, 1999), it is unlikely that individual readers rely solely on identifying rhetorical uses of this feature. In the current study, detecting authorial identity was also understood as a form of tacit knowledge. Academics understood authorial writing to be detectable in student assessments, but described it as hidden within other elements of writing, such as argument.

> "the mark schemes aren't very explicit anyway, but they do talk about argument, and so its hidden within that and I'm not [*sure*] authorial voice would actually make any more sense to students than argument actually." (Amy, History)

Although the academics linked authorial identity to awarding marks during assessment, they found it difficult to justify this in light of explicit rules. When asked to codify features of student work that indicated authorial identity, academics found it difficult to explain. They described feelings and intuitions rather than explicit indicators.

> "It's quite hard to explain, you just get a gut feeling when you've read it, it's hard to quantify that." (Ryan, Nursing and Healthcare)

> "often I read one A4 page you know, you feel good about it you know, when [*you*] read a few sentences sometimes if it's a good piece of work, you immediately get the buzz about it. Alright, if it's a poor piece of work you know, you immediately feel the exact opposite, the frustrations." (Tak Wing, Engineering)

> "I can't think of any specific examples, but there is a definite writing style where you realise it's not a collection of facts, it's somebody putting it to

> you in such a way that hasn't been put before, there's a certain realisation of that, I can't quite explain it in any other way." (Sarah, Biological sciences)

These descriptions of detecting authorial identity fit with Sternberg and Howarth's (1999, pp. 231) definition that "Tacit knowledge is procedural knowledge that guides behaviour but that is not readily available for introspection." According to these academics, detecting authorial identity in writing can be conceptualised as a form of tacit knowledge, suggesting that socialisation and practice would improve this in novice members of the community, including academics.

Identification of authorial identity as a form of tacit knowledge is important, because current plagiarism pedagogy is strongly focused on the teaching of codified knowledge. Current policies on plagiarism concentrate on classifying offences and explaining these categories to students; even strategies with pedagogic aims focus on codified skills and rules. This theme highlights the need to emphasise socialisation into academic communities as part of developing authorial identity and preventing plagiarism.

Negotiation of identities

Academics understood authorial identity to be dependent on a writer's self-identity and how this compared to the writer's conception of author. The analysis revealed that academics perceived authorial identity as dependent on how they managed interactions between multiple identities. These identities were considered important for professional academics and students; however, it was suggested that academics are aware of these relationships, whereas students do not perceive an association between their own identities and authorial identity. Self-identity was understood to be an important part of authorship:

> "I think that concept of authorship, it goes beyond ownership to self-identity as well, it's a big part of yourself." (Stuart, Psychology)

Academics associated authorial identity with their professional identities as members of a discipline and extended this understanding to fellow scholars, by assuming that they shared this conceptualisation. When asked to reflect on their own development of authorial identity, this was related to their inculcation into a disciplinary culture:

> "you enter a certain professional discipline, you wanna [sic] become part of that discipline. So you and I do that when we become researchers in a particular tradition. You know we become part of the paradigm and we become part of it because of our allegiance to certain researchers or certain theorists, certain conventions, certain ways of doing things." (Jackson, Education)

> "I think any good academic writer persuades the reader that they're right and they go out of their way to construct the story … we're story tellers and actually when you start to think about what we do in those terms, the notion of author becomes absolutely central to what we do. We're telling stories, we're telling stories based around evidence but we're still telling stories." (Richard, Psychology)

Some of the participants in this study did not have a strong sense of authorial identity and attributed this partly to their disciplinary identities. In healthcare subjects, lack of authorial identity was attributed to focus on the practical elements of their subject and the more established academic traditions of other disciplines. For example:

> "we do what we're trained to do, therefore, academia and writing about it is a world away, it doesn't, you'll hear it all the time, it doesn't make you a good nurse." (Janet, Nursing and Healthcare)

> "there's a fairly elite group of authors that are publishing in the serious journals and a lot of people working in higher education don't feel, in nursing, see themselves more as practitioners than academics ... nursing as an academic discipline, I think is still very much maturing, it's got a long way to go and so it is changing." (Robin, Nursing and Healthcare)

Members of other disciplines saw their disciplinary identities as closely related to authorial identity; it was assumed that their colleagues would share these understandings of authorship:

> "the way that I'd been thinking of authorial presence is really tied up, inextricably tied up with what doing philosophy is." (Kareena, Philosophy)

> "I have difficulty even imagining so, on doing the kind of thing I do, from failing to believe that they were the author. I could imagine that maybe say in other disciplines." (Liam, Philosophy)

> "traditionally psychology involves that production of a written piece of work which is published for wider consumption and is peer reviewed along the way, I would think it's a fairly safe bet that most psychologists would view that as authorship of a piece." (Stuart, Psychology)

When asked about the way that authorial identity was projected into writing, academics assumed a degree of homogeneity across subjects that they viewed as similar.

> "in scientific fields almost everybody will write in third [*person*] presentation, very rare that I would see anything except those records of experiments." (Chun Kit, Mathematics)

Although some academics assumed a shared understanding that authorial identity was valued in their discipline, others perceived a lack of authorial identity in their colleagues.

> "I think that in psychology method is more important than voice." (Damian, Psychology)

> "There are plenty of academics who do that, they just write stuff, and I say well how can you, you're putting yourself out there, and they say oh no no no, it's just history and I'm going, no, it's you." (Amy, History)

In fact, assumptions relating to disciplinary homogeneity were shown to be incorrect. For example, one academic from psychology did not think of herself as an author at all, despite having authored over 10 peer-reviewed journal articles:

> "I wouldn't say that I was an author because I've not written a book, which is really weird 'cause I've written journal articles and I guess you know the definition I've just given of an author is anybody who writes anything but I

> don't consider myself as an author, I wouldn't use that term author." (Naomi, Psychology)

Association of one's professional role with authorship was not simply a result of a writer's publication record and experience; despite providing a definition of author that included her own role, she struggled when asked to apply this status to herself. This academic continued to struggle with the concept throughout the interview, which suggests that academics may struggle to have "a sense of themselves as an author" (Pittam et al., 2009, pp. 153) in the same way that students do.

> "Am I an author or do I just write papers? Is that an author? You know it's not really, it's just, it's that word, the way that word in my head." (Naomi, Psychology)

The difficulty with self-identification as an author described above is similar to comments made by students (Pittam et al., 2009), but they have not previously been identified in academics. Students in Pittam et al.'s study felt that the term author was too grand for their own status. The similar belief that an academic is not an author because they have not written a book suggests that the participant was unable to overcome this idea of an author, despite the definition of an author given earlier in the interview.

Hyland (2001b) identified a reluctance of science-based researchers to explicitly state the role of author in their writing. In Hyland's research, participants justified this by suggesting that a post-positivist perspective of research accepts and assumes that an author is present. Naomi identified with the role of author after extensive reflection, suggesting that difficulties with authorial identity could be due to a lack of reflection and discussion about the topic.

> "yeah if you think about what an author is then yes I am, but before now I've never actually called myself that or referred to myself as I am the author of that and that and that." (Naomi, Psychology)

This analysis suggests that individuals can have difficulties identifying with the role of author even if they are experienced and published academic writers. Abasi et al. (2006) suggested that identification with the role of author is a slow developmental process and

describe the late emergence of it as a "fact of life" (Abasi et al., 2006, pp. 279), but the process that this academic went through over their interview suggests that careful reflection on authorship can affect change rapidly with regards to authorial identity.

Donovan, Fjellestad and Lunden (2008) suggested that the title of author and the authority associated with this status is historically linked to academia and scientific discovery. This analysis revealed that the scholarly understanding of an author explained by Donovan et al. is an attitude not universally held by academics. Even when this understanding of authorship is present, individuals may find it difficult to identify themselves with the role. This difficulty was not isolated to one individual in the sample; for example, when another academic considered writing for a higher education teaching qualification in relation to authorial identity, she associated authorial identity with books:

> "I suppose I see it as an academic piece. I see authors as more erm, fictional, I suppose I see authors, true authors as writing books or being published and therefore I don't expect the piece I'm doing for a module to have that, I suppose I don't." (Janet, Nursing and Healthcare)

Variations in academics' understandings of authorial identity suggest that beliefs relating to authorship can differ greatly between individuals, even those writing at the same academic level. It also highlights the fact that some academics assume their colleagues identify with the role of author when this may not be the case, signifying that academics could benefit from open discussion of authorial identity. Academics perceived complex relationships between authorial identity and disciplinary identity. When discussing their own authorial identities, some academics contrasted their authorial identities with those from other disciplines.

> "different disciplines would probably have quite different ideas about what an author is and conventions for showing authorial presence." (Kareena, Philosophy)

> "history is probably a bit more different to the erm, social sciences in that we don't use the first person; we try to distance ourselves as a sense of academic neutrality." (Lucas, History)

> "Somebody who is in the English department you know or in modern languages or whatever might think we are a bit closer to some abstract sciences, and like in those cases the imprint of an author is going to be apparent in a different way." (Arthur, Philosophy)

They also observed differences between sub-disciplines of their subject areas and understood different traditions to impact on authorial identity.

> "particular professions do better at critical appraisals than others, and the more scientific professions struggle compared to the more holistic type of care professionals, so just to give an example, nurses I think write better critically than pharmacists." (Ryan, Nursing and Healthcare)

Authorial identity was also understood as important for establishing the authority and legitimacy of academics' disciplinary identities.

> "it is more than having a sense of yourself as an author, you just do just need to have a sense of yourself, you know, like who I am, what special interesting, what experience and things have I got, and you know, what you know, legitimacy do I have to say these things." (Anthony, Education)

> "it's important for you to identify with an authorial identity as well as your own identity, because it demonstrates that you know what you're doing" (Trina, Business and Marketing)

These assumptions were reflected in expectations that academics had about their students. Students were expected to identify themselves as members of disciplinary communities by conforming to conventions related to authorial identity; disciplinary identity was understood to influence the way that a writer composed their work and academics used these features to gauge students' integration into the discipline.

> "because of the training background that we had since we were students, we like to see people's essay that are written in third person sense and

> people who start using I or something like that, we think that they haven't get into a particular community if you like." (Chun Kit, Mathematics)

> "they're not supposed to be […] sort of overly self-identifying, so there's supposed to be this veneer of objectivity which is part of law." (Stanley, Law)

There were differences in the perception of how strong students' disciplinary identities were. When asked about authorial identity improvement in their students, some suggested that it was successfully developed by teaching practices and facilitated by engagement in the academic department's community:

> "Yeah, especially by the time they get to third year, even in the second year and I think it's reinforced by other activities going on, such as a strong history society and a strong sense of identity with the department." (Lucas, History)

Other academics were not as optimistic about their students; most expected their students to struggle with the concept of authorial identity. A lack of authorial identity in students has been identified in previous research (Pittam et al., 2009); this analysis reveals that academics were aware of this issue in students. Academics attributed this to students not seeing authorial identity as related to the roles that they self-identified with:

> "we have whole sets of people who, who maybe don't buy into authorship or will struggle to buy into the idea of authorship because that's not what they see their role as an undergraduate as being." (Richard, Psychology)

> "I wonder if they see themselves more as writers in a mechanical sense, more than authors in a personality sense" (Trina, Business and Marketing)

Some academics suggested that forming identities as authors was difficult for students because they did not have stable senses of themselves generally. For example, when asked to identify barriers to developing authorial identity in students:

> "you don't really have an approach until you have an idea about who you are and what you want to do … they may not know what kind of identity they want to express." (Damian, Psychology)

> "in order to have an authorial identity, you've got to have an identity first. I think some people wouldn't think of themselves as authors because they don't know who they are or what they are in themselves." (Anthony, Education)

> "if I said to them I also want to see your personality come through, some of them might struggle to create a personality, rather than just using your personality" (Trina, Business and Marketing)

Identity research has suggested that individuals go through progressive change towards developing stable identities during late adolescence and early adulthood (Kroger, Martinussen & Marcia, 2010). It has also been suggested that identity formation continues into late adulthood and that many students leaving higher education do not have stable identities (Kroger, 2007). As the age range discussed is applicable to a high proportion of undergraduate students, academics may be observing a degree of apprehension about their sense of self, before they have started to consider identities that include themselves as authors.

There were mixed expectations about how students would react if they were asked directly about a specific piece of writing; for example, one academic suggested that students would be able to identify as authors:

> "If you asked them do you feel that you're the author of *this report,* of *this essay* [researcher's emphasis], I suspect that most of them would agree that they are." (Stuart, Psychology)

In Pittam et al.'s (2009) research, students participating in focus groups found it easier to identify as an author when referring to specific pieces of writing. Reflection was shown to be an important component in developing authorial identity by research evaluating an authorship focused intervention. Elander et al.'s (2010) intervention improved measures of

authorial identity and confidence to avoid plagiarism using sessions that considered the authorship of written pieces. The current analysis suggests that pedagogical interventions to improve authorial identity would be more effective if students were encouraged to reflect on authorial identity in their own work.

Some academics found it difficult to comprehend problems relating to a negotiation of student identities and authorial identity. Authorship and authorial identity was closely linked to their own identities so it was only after careful reflection that students were thought to have different issues compared to academics.

> "I would have thought prior to this conversation, it would have been almost incoherent to not consider yourself to be the author. I'd be interested to see how one could set about writing an essay and then not see themselves as an author, although I'm saying that maybe some students do do that but as I say I think that's an incoherent position to have." (Liam, Philosophy)

A sense of self as an author was conceptualised as an important part of having a professional academic identity, but this was overlooked in discussions of student writing. For example, one academic suggested that a continuous sense of authorship was associated with morale in his own work, but didn't recognise that students complete unconnected assignments for different modules:

> "Seeing your work as part of a continuous process is quite important because it would be quite demoralising and alienating if you were just creating sporadic and unconnected pieces of work and I suppose the conception of yourself is in some way a kind of constant thing behind that process as well, it to some extent gives it value." (Arthur, Philosophy)

An authorial writer was expected to have a firm understanding of the role of author and to identify with that notion of author. This was understood as related to other identities associated with interactions within and between communities. Understanding of authorship has been identified as an important part of authorial identity in previous research (Pittam et al., 2009). This analysis suggests that the interaction between this understanding and other

identities is important for being an authorial writer and academics perceive students to have difficulties with this. This was attributed to students not having stable self-identities, but also because their self-identities were not seen as compatible with the role of author. Academics suggested that pedagogic use of reflection on authorship could improve students' understanding and identification with author status. In addition, some academics experienced similar issues to students, indicating that authorial identity interventions targeting professional academics is an area for further investigation.

4.6 Discussion

The understandings of authorial identity highlighted in the current study have important implications for contemporary approaches to plagiarism pedagogy. There are three main points that contribute to the theoretical framework of the authorial identity approach developed by Pittam et al. (2009). Firstly, the current analysis identified conceptualisations of authorial identity that were not included in Pittam et al.'s framework based on student understandings. Secondly, academics understood their own conceptualisations of authorship as being different to the understandings of authorship that they perceived as being prevalent in students. Finally, the two integrative themes highlight the complex and interconnected nature of authorial identity. The impact on authorial identity pedagogy and on-going research efforts (e.g., Ballantine & Larres, 2012; Kinder & Elander, 2012; Maguire et al., 2013) are outlined in the current discussion section. In addition, limitations of the current study are presented alongside caveats for interpreting the findings.

Understanding the authorial writer

Academics in the current study conceptualised authorial identity as a characteristic that writers can have. They held shared understandings that five main attributes are important for defining a writer with authorial identity; an authorial writer has confidence, values writing, takes ownership of their writing, has independent thinking and sets rhetorical goals. Previous research developed a model of authorial identity related to six factors (Pittam et al., 2009). Three were identified as attributes of the writer that were components of authorial identity: 'confidence in writing', 'understanding authorship' and 'knowledge to avoid plagiarism'. The other three were conceptualised as approaches to writing associated with different degrees of authorial identity: a 'top-down approach to writing', a 'bottom-up approach to writing' and a 'pragmatic approach to writing'.

Some of Pittam et al.'s (2009) features relate closely to the academics' understandings of authorial identity identified here. Although the current study focused on academics' understandings of the construct, these similarities suggest that some conceptualisations are shared between students and academics. In particular, the subtheme of 'authorial confidence' in the current analysis is related to the 'confidence in writing' factor identified in student understandings of authorial identity. The 'authorial goals' and 'valuing writing' subthemes raise similar issues to the 'pragmatic approaches to writing' factor from Pittam et al.'s original study. In addition, the integrative theme 'negotiation of identities' links with Pittam et al.'s 'understanding authorship' factor. However all of the themes identified in the current research have elements that were not included in the original framework.

'Confidence in writing' was identified as a subscale of the Student Authorship Questionnaire (SAQ) by Pittam et al. (2009). The subtheme of 'authorial confidence' includes a wider range of motivational factors than the subscale labelled as 'confidence in writing' by Pittam et al. Academics understood authorial identity to be related to confidence in other areas as well as writing, such as thinking. The 'authorial confidence' subtheme also included an understanding of overconfidence as an issue relating to authorial identity. Jessen and Elander (2009) identified this as a problem that students experience during transition from further education into higher education and the current study suggests that academics perceive it as being related to authorial identity. Previous research examining self-efficacy and self-beliefs in writing has found that it can be influential on measures of academic achievement (Pajares, 2007; Valentine et al., 2004) and this analysis suggests that positive self-beliefs are important for an authorial writer.

Interventions to improve students' self-beliefs may be crucial to developing their authorial identity. However, a large body of research cautions against attempts to artificially improve self-efficacy; instead, it recommends that instructors encourage students to adopt incremental theories of development in educational domains (Dweck, 2000). Incremental theories that conceptualise abilities as domains for improvement with practice can be directly contrasted with entity theories that ability is fixed; this suggests that development of writing and authorial identity should be reflected upon with students. Other researchers have also advocated this approach to writing pedagogy (Norton, Owens & Clark 2004), and suggested that reflection can facilitate meta-learning in undergraduate students. This would highlight

the malleable nature of authorial identity, so that students do not perceive the complicated task of advanced academic writing as impossible to master without natural ability.

Incorporated with previous research (e.g., Pittam et al., 2009), the current study expands the theoretical conceptualisation of authorial identity. In particular, academics in the current study did not emphasise specific approaches to writing and strategies for composition; instead, the themes suggest that authorial identity is understood as a set of values and beliefs about academic writing.

Differences between experts and novices

Pedagogic researchers have identified differences between students and academic staff with regards to their conceptualisations of plagiarism (Ashworth, Freewood & Macdonald, 2003; Bennet, 2005; Flint et al., 2006; Wilkinson, 2009), assessment criteria (Elander et al., 2006; Jessen & Elander, 2009) and other aspects of writing (Norton, 1990). The findings of the current study suggest that there is also disparity between the ways that academics and students understand authorial identity.

Previous psychological research has highlighted a number of differences between expert and novice writers in terms of the composition strategies that they adopt (Bereiter and Scardmalia, 1987; Flower et al. 1990; McCutchen, 2011); however, there is relatively little research on the psycho-social aspects of developing academic writers. Research has identified that students who improve the most at writing are those that recognise themselves as novice writers with skills to develop, and those that conceptualise writing as fulfilling a purpose other than assessment (Sommers & Saltz, 2004). These issues are also identified as relating to authorial identity in two of the current analysis' subthemes: 'valuing writing' and 'authorial goals'. In particular, academics in the current study suggest that students do not value writing, and they do not conceptualise writing as fulfilling a purpose other than assessment.

Differences have also been found in student understandings of assessment practices and plagiarism; in particular, Norton (1990) identified that students emphasised the content of writing, whereas academic staff valued the use of argument. Wilkinson (2009) found that students and academics differed on their perceptions about the reasons that plagiarism occurs. These disparities suggest that students and academics conceptualise writing differently and the current findings indicate that this is related to differences in authorial identity. In addition,

the differences between students' and academics' perceptions highlight one of the limitations of the current study; the beliefs about student authorial identity held by academics may not be accurate representations of the motivations behind student behaviour. However, the academics' understandings offer useful insights in their own right. The current analysis suggests that academics perceived writing and authorial identity as important issues in their teaching. Despite this, they found it difficult to cultivate similar values in their students which suggest that academics are aware of a lack of authorial identity in student writing, and would benefit from the development of authorial identity pedagogy to incorporate in their teaching.

The complexities of authorial identity

The five subthemes identified in the current analysis suggest that confidence, valuing writing, ownership of writing, independent thinking, and rhetorical goals are components of authorial identity. The practical implications of these findings are relatively straightforward; these aspects of student writing should be targeted for improvement with writing instruction. The integrative themes raise more complicated issues that warrant further investigation. Firstly, issues with authorial identity were identified in professional academics with extensive writing experience; if expert writers have difficulty identifying as authors, improving authorial identity in novices is likely difficult to achieve. Secondly, the conceptualisation of authorial identity as tacit knowledge calls the effectiveness of explicit authorial identity instruction into question, suggesting that alternative methods of developing these characteristics need to be considered.

The two integrative themes are related to all of the other subthemes. Tacit knowledge was understood to facilitate the development of confidence, values in relation to writing and the conceptualisation of writing as a task with communicative goals. Academics in the current study suggest that improvements were best achieved with exposure, practice, reflection and the development of communities. These approaches are also advocated for the development of writing skills (Kellogg & Whiteford, 2012), understanding of assessment (Rust et al., 2003), and understanding of learning (Norton et al., 2004). In addition, academics were aware of the complexities related to negotiating identities in their own writing and suggested that students struggled with this aspect when writing assessments. When discussing their own authorial identity and the writing of their peers, academics referred to their disciplinary identities and communities; this suggests that students could benefit from fostering identities as junior members of their disciplinary communities.

Overall, the two integrative themes paint a complex picture of authorial identity. Although the subthemes suggest that there are individual characteristics that can be targeted for improvement with pedagogy, the integrative themes indicate that initiatives should include social aspects of community development and tacit knowledge transfer to be effective. These could prove difficult to achieve, given increasing demands on the time and resources of academic staff. In a context where explicitly stated targets become increasingly difficult to achieve, aspects of pedagogy that are difficult to measure and justify could suffer from a lack of attention. The current analysis highlights the need to maintain scholarly communities and welcome students as junior members of these social structures; in a context where grades are prioritised over values, these structures become increasingly important to the maintenance of academic integrity.

4.7 Summary

The current chapter presented a qualitative study exploring academics' understandings of authorial identity. Focusing on the characteristics that defined a typical authorial writer, the analysis revealed aspects of authorial identity that are relevant to students and academic staff. The analysis also identified two integrative themes that underscore the importance of socialisation in the development of authorial identity. In addition, the qualitative research presented in the current chapter directly informed the quantitative studies, by contributing to the item generation for scale development. The first of the two quantitative studies is presented in the following chapter.

Chapter 5

Study 2: Development of the Student Attitudes and Beliefs about Authorship Scale

5.1 Overview

The current chapter presents study two; a scale development project informed by the findings presented in the previous chapter. This chapter includes an account of the process used to generate a pool of items, assess their content validity and then administer them to a multidisciplinary sample of students. The data was then analysed using exploratory factor analysis (EFA) to identify latent factors underlying student attitudes and beliefs about authorship. This process identified a three factor model of student authorial identity that can be measured by the 17 items contributing to stable factor structure.

5.2 Introduction

Authorial identity has been used to investigate unintentional plagiarism (Abasi et al., 2006; Elander et al., 2010; Pittam et al., 2009). These researchers explored student understandings of authorial identity and developed a Student Authorship Questionnaire (SAQ) for measuring the beliefs relating to authorship that students hold (Pittam et al., 2009). Further work used the concept of authorial identity to develop an intervention for psychology students that improved understandings of authorship and confidence to avoid unintentional plagiarism (Elander et al., 2010). In addition, authorial identity has been examined in different disciplinary contexts, such as accounting (Ballantine & Larres, 2012) and allied health subjects (Maguire et al., 2013). These studies have investigated authorial identity using the SAQ developed in Pittam et al.'s (2009) mixed methods study.

The SAQ was developed by generating items from the literature and reducing the item pool through discussion with tutors and students (Pittam et al., 2009). Pittam et al. analysed student responses to this questionnaire using EFA and identified a six factor model of authorial identity in students. However, there are a number of methodological issues with development of this measurement model. Firstly, the model reported by Pittam et al. does not achieve simple structure; there are multiple cross-loadings when examining loadings at the .40 level and items were only interpreted according to their highest loading. In one case, the difference in magnitude between the item's loadings onto two factors was as low as .03. Secondly, three of the six factors identified in the model are only measured by two items; factors with less than three item loadings are not considered stable enough for a reliable measure (DeVellis, 2012) and Cronbach's (1951) α were not calculated to estimate reliability for these factors. In addition, Cronbach's α for the other three factors ranged from poor to moderate, suggesting that these had problems with internal consistency. Finally, the statistical

techniques used to extract factors are questionable, because using the Kaiser (1960) Eigenvalue over one rule for deciding dimensionality has been heavily criticised by measurement theorists (e.g., Zwick & Velicer, 1986; Hayton et al., 2004; Velicer et al., 2000).

Aside from the statistical issues with Pittam et al.'s (2009) analysis, there are other problems with the approach that was adopted for item generation. Although SAQ items were discussed with tutors and students to examine content validity, a more systematic approach would have been preferred for this exploratory part of scale development (DeVellis, 2012). In addition, the authorial identity construct was not established enough in the psychological literature to justify relying on published sources alone for item generation; this approach risked leaving out items that contribute to the construct.

An alternative model of authorial identity has been developed recently by Ballantine et al. (2013) using the 18 item SAQ. Exploratory PCA analysis identified a three-factor model that included 12 of the original items. The psychometric properties for this version of the SAQ were substantially better than the results from Pittam et al.'s study. However, the Ballantine et al. scale does not deal with the problems relating to the SAQ's item generation, as it uses the same set of original SAQ items for data collection. These problems raise issues for further development of the authorial identity approach and research relating to this construct. Recent research on authorial identity has been based on an unreliable measure (e.g., Ballantine & Larres, 2012; Elander et al., 2010; Kinder & Elander, 2012; Maguire et al., 2013) and the models of authorial identity proposed by Pittam et al. and Ballantine et al. are not supported by robust empirical evidence.

In addition to the issues with previous authorial identity research available in the literature, the qualitative findings presented in study one built upon the model of authorial identity previously developed by Pittam et al. (2009). A revised model of authorial identity includes a number of features not measured by the six-factor model from the SAQ; these include wider self-confidence issues than those identified by Pittam et al., critical thinking, and attachment to one's written work. Development of a new scale based on the revised model of authorial identity was required for continuing research and development of interventions using the authorial identity approach. Measuring authorial identity reliably requires a psychometric tool

that has been developed systematically and a latent factor model that has been identified using robust statistical techniques.

5.3 Aim and Objectives

Aim:

The current study aimed to identify latent variables underlying student attitudes to authorial identity and to develop a psychometric measure of these variables.

Objectives:

- Assess the content validity of a large pool of items theorised as relevant to measuring authorial identity in students.
- Identify a parsimonious factor structure that models student authorial identity.
- Develop and present a valid, reliable and robust measure of student authorial identity.

5.4 Design

The study was designed as a scale development study to identify a measurement model of authorial identity in students; these methods draw upon Classical Test Theory (CTT) and psychometric methods outlined by DeVellis (2012). An overview of DeVellis' recommended steps and their influence upon the study design is included in Table 8. A detailed account of these steps is included in the procedure section of this chapter.

Steps one to five are presented in the content validity section below, and steps six to eight follow in a separate section reporting the administration of items to a scale development sample. Although presented separately to aid interpretation, both stages were part of a single scale development study. Figure 15 shows the methods used to carry out the steps recommended by DeVellis.

Table 8. Eight steps of scale development outlined by DeVellis (2012) and the corresponding methods used in study two

Content removed for copyright reasons. The relevant steps of scale development are available in the following publication:

DeVellis, R. F. (2012). *Scale Development. Theory and Applications* (3rd edition). London: Sage Publications.

For information about the corresponding methods used in the study presented here, please contact the author of the thesis directly.

Figure 15. Flowchart of the scale development procedure for study two and corresponding steps recommended by DeVellis (2012).

Content removed for copyright reasons. The relevant steps of scale development are available in the following publication:

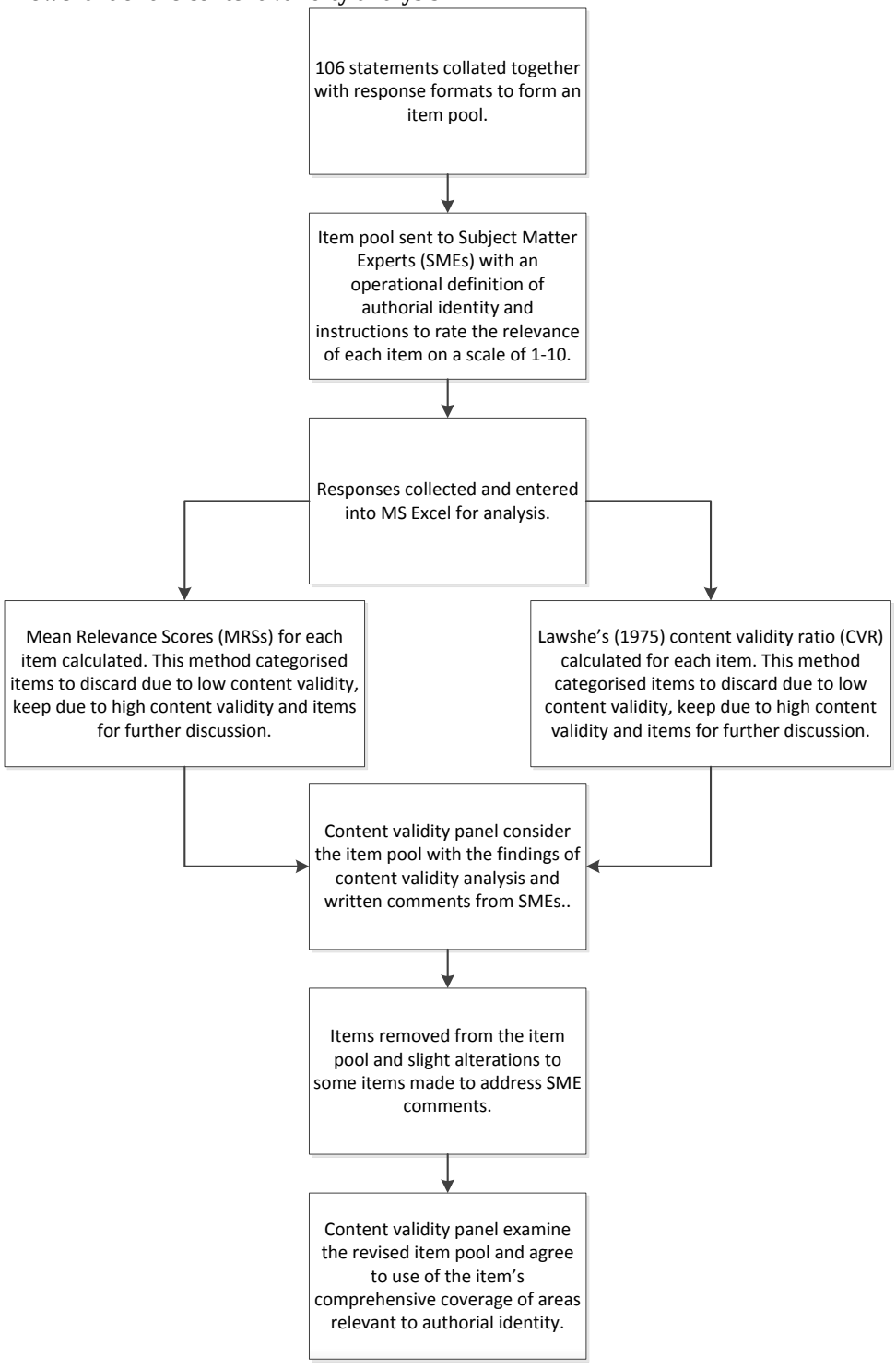
DeVellis, R. F. (2012). *Scale Development. Theory and Applications* (3rd edition). London: Sage Publications.

For information about the corresponding methods used in the study presented here, please contact the author of the thesis directly.

5.5 Content validity

Assessment of content validity using subject matter experts (SMEs) is recommended to ensure the overall construct validity of a measurement (Strauss & Smith, 2009). The current section reports the collection and analysis of content validity data for the initial item pool of 106 items. A flowchart detailing this process is presented as Figure 16.

Figure 16. Flowchart of the content validity analysis



5.5.1 Procedure

The statement pool (available in Appendix 9) generated using qualitative methods described in 3.6.5 was examined to identify issues associated with authorial identity; the majority of proposed items referred to attitudes and beliefs (indicatively or contra-indicatively) understood as typical characteristics of writers with authorial identity. This made the items suitable for a typical performance measure of authorial identity. A typical performance measure can be contrasted with maximal performance measures that use items that can be completed correctly by an individual with the attribute of interest (Mellenbergh, 2011). A typical performance measure was considered most suitable for examining authorial identity as it was not conceptualised as ability; the characteristics of the statement pool confirmed this.

The statements were also inspected to identify a suitable response format. A six-point Likert scale is a common response format used in measures of opinions, beliefs and attitudes (DeVellis, 2012), and was selected for use in this study, as the statements were suitable for responses with incremental levels of agreement. A number of other options were considered and an overview of the reasons they were deemed unsuitable is reported here. Semantic differential response formats have traditionally been used in attitude measures (e.g., Osgood & Tannenbaum, 1955) and this format was considered for use in the current study. Some statements in the current pool included contrasts between two extremes; however, many of them did not, making a semantic differential format unsuitable. Visual analogue scales (Mayer, 1978) were considered, but concerns about their presentation and accessibility in online surveys prevented their use in the current study. Finally, binary response formats are also commonly used in psychometric scales, but limitations in the statistical variance that they measure mean that a longer scale is necessary to identify a robust model of measurement (DeVellis, 2012); this was considered unsuitable for a psychometric measure to be used in pedagogic contexts.

Statements were collated with the six-point Likert scale labelled ‘Strongly disagree’, ‘Disagree’, ‘Slightly disagree’, ‘Slightly agree’, ‘Agree’, and ‘Strongly agree’. This formed a preliminary item pool of 106 items (available as Appendix 9) that was sent to Subject Matter Experts (SMEs) for evaluation of content validity. SMEs were identified as professional academics with extensive experience of assessing higher education level academic writing. They were recruited by post and email using personalised invitations (see Appendix 10 for an

example invitation). An operational definition of authorial identity and details about content validity were sent out to academics.

Study one suggested that authorial identity is a construct that academics understand in different ways, so content validity data was collected from SMEs using a numerical scale; this was done by asking for a quantitative response ranging between one and ten that represented the relevance of each item to measurement of authorial identity. In addition, SMEs were asked to provide written comments on items and about the item pool as a whole. The construct was defined to SMEs in the following statement:

> "The construct has been used in pedagogic interventions that aimed to increase understanding of authorship in undergraduate students and reduce unintentional plagiarism (Elander, Pittam, Lusher, Fox & Payne, 2010) and has been defined as the following:
> 'Authorial identity is the sense a writer has of themselves as an author and the textual identity they construct in their writing.' (Pittam, Elander, Lusher, Fox & Payne, 2009)."

All SMEs approached to comment on content validity were familiar with the concept of authorial identity, but an operational definition was provided to ensure clarity. This step is considered to be an important part of scale development and assessment of content validity (DeVellis, 2012). Academics from a variety of disciplines were contacted to act as SMEs; however, all but one of the respondents identified themselves as psychologists. The non-psychologist was a healthcare academic with established expertise on authorial identity who had published research on the topic area.

The content validity data was collated and analysed using the methods outlined in section 3.7.4. The findings of these analyses were examined by a smaller panel consisting of the lead researcher and two supervisors; one of these was an expert on authorial identity with published contributions on the topic (Professor James Elander), and the other had specialist expertise in psychological measurement (Dr. Edward Stupple). In addition to the analysis of content validity ratings, this panel examined comments provided by the SMEs. Necessary revisions to the pool of statements were to produce a content valid item pool for the Student

Attitudes and Beliefs about Authorship Scale (SABAS). The resultant pool of items was then collated within a questionnaire pack labelled as QP1 (Appendix 11).

5.5.2 Methods for Analysing Relevance Scores

Two methods were used to examine how relevant items were to the authorial identity construct as understood by SMEs. One was a modified version of Lawshe's (1975) quantitative approach to content validity and the other method was based on the mean relevance score of each item across all SMEs. These quantitative analyses were used to aid content validity decisions made by a panel, by placing items into one of three categories – items to discard, items to retain and items to discuss.

Modified content validity ratios

The three categories of essential, useful and not necessary recommended by Lawshe (1975) represent an ordinal scale with three levels. To include a larger degree of variance in SMEs' relevance ratings in relation to authorial identity, a rating between one and ten was requested instead. Content validity ratios (CVRs) were calculated on the basis that scores of seven or above were equivalent to the essential response in Lawshe's approach. These values were recorded as CVR7 for each item. Lawshe's formula to calculate a CVR was adapted so that the number of SMEs identifying an item as essential was replaced with the number of SMEs rating the item as seven or above in terms of relevance. The equivalent formula is given below where n>7 = the number of SME ratings greater than or equal to seven.

$$CVR7 = (n>7 – N/2)/ (N/2)$$

Use of CVR7 values in conjunction with Lawshe's (1975) table (Table 9) identified items to retain in the scale for administering to a test sample. The use of 15 SMEs suggests that items with a CVR7 less than .49 should be discarded; items with a CVR7 higher than .49 were categorised as items to keep using this approach. However, content validity for constructs with fuzzy definitions and varying conceptualisations can be particularly difficult to assess (Murphy & Davidshofer, 2005). In order to take these complications into account a CVR6 was calculated using the SMEs rating an item's relevance at six or higher.

Table 9. Lawshe's (1975) Table of minimum values for the CVR, using a one tailed test, p <.05

Content removed for copyright reasons. The relevant table is available in the following publication:

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology*, *28*, 563-575.

This process took into account ratings at the top end of the 'useful but not essential category' in Lawshe's example. The equivalent formula is given below where n>6 = the number of SME ratings greater than or equal to six.

$$CVR6 = (n>6 - N/2)/ (N/2)$$

These outputs were recorded as CVR6 values for each item. These ratios were then subject to the same table of minimum ratios to identify items for a discuss category. Items with CVR6 values lower than .49 were categorised in the discard category using the CVR approach; items with a CVR6 greater than .49, but a CVR7 less than .49 were categorised as items to discuss.

Mean relevance score approach

The mean relevance score approach was developed to aid interpretation of the content validity data given by SMEs. Mean relevance scores (MRSs) and standard deviations were calculated for each item. A spread sheet was designed to calculate these values and flag items with a mean relevance score of six or lower. These were categorised as items to discard using this approach. Items flagged as having MRSs above seven were categorised as the items to retain using this approach. All items with MRSs between these two limits were categorised as items to discuss.

Content Validity Panel

The categorised items were evaluated by a content validity panel of three researchers. Although all of the items were considered, particular attention was focused on those categorised as items to discuss by either quantitative method. This panel also considered the qualitative comments of SMEs and revised some items based on recommendations; care was taken not to change the meaning of any items during this process. This panel met twice; the first meeting was focused on discarding items and recommending changes, the second meeting confirmed the item pool after items had been removed and changed.

5.5.3 Results of the Content Validity Analysis

Ratings of relevance for items (n=106) were collected from SMEs (n=15); means and standard deviations of these ratings are given in Table 10. The names of SMEs have been changed to assigned pseudonyms.

Table 10. Mean relevance scores for SMEs.

SME	Mean relevance score	Standard deviation
Kieran	5.82	2.65
Miranda	5.84	1.96
Craig	5.63	2.26
Annabel	6.42	1.43
Jack	7.20	1.53
Pamela	6.28	2.60
Gillian	7.11	1.42
Julie	6.19	2.25
Samantha	6.53	2.60
Elliot	7.44	1.02
Matthew	6.58	2.87
Marcus	6.83	1.72
Abigail	7.29	1.99
Total	**6.55**	**2.17**

These ratings were analysed using two procedures: a modified version of Lawshe's (1975) approach and calculation of Mean Relevance Scores (MRSs). A summary of the results using approach based on Lawshe's CVR is presented in Table 11. A summary of the content validity results using MRSs is given in Table 12.

Table 11. Summary of item classification using modified Lawshe's (1975) CVRs

	CVR7 ≥ .49 (Keep)	CVR6 ≥ .49 ≥ CVR7 (Discuss)	CVR6 ≤ .49 (Discard)
N of items (%)	26 (24.5)	26 (24.5)	54(50)

The mean CVR7 was .15 (SD=.48) and the mean CVR6 was .46 (SD=.42).

Table 12. Summary of item classification using MRSs

	MRS ≥ 7 (Keep)	6 < MRS < 7 (Discuss)	MSR > 6 (Discard)
N of items (%)	43(4.6)	28(26.4)	35(33.0)

Each item's categorisation across both methods was cross referenced; the categorisations agreed for 62 of the items and there was a discrepancy for 44 of the items. For the items that had the same category using both methods there were 22 to keep, 35 to discard and 5 to discuss. A content validity panel of three researchers examined the items with these analyses. After inspecting these items, the panel collected the 5 to discuss with the 44 discrepancies; it was also decided to keep the 22 items that both approaches suggested to keep and discard the 35 items that both approaches identified as having low content validity. The remaining 49 items were reviewed with the findings of both analyses and the qualitative comments of SMEs. After consideration of item meanings in conjunction with SME comments, 25 of these items were added to the item pool and 24 were discarded. This resulted in a pool of 47 items suitable for administering to a test sample on the basis of the items' content validity.

5.6 Administration of the Items to a Test Sample

The current section reports on the administering of the 47 content valid items to a test sample of students. The data from this part of the study was analysed using internal consistency estimates and factor analysis to develop the item pool into a psychometrically valid and reliable scale.

5.6.1 Measures

The 47 items identified as having acceptable content validity were assembled as a questionnaire. This was then collated together with a written brief, a consent form, a demographic questionnaire and a detachable debrief sheet. This questionnaire pack was labelled as QP1 and is included in the appendices (Appendix 11).

QP1 included the following sections:

- Briefing information
- Informed consent form
- Demographic questionnaire
- Content valid item pool for SABAS (47 items)
- Detachable debrief sheet

The demographic questionnaire included questions about the participant's gender, mode of study (online/on-campus), status as a mature student, full time/ part time study status, nationality, first language, and stage of study. These questionnaire packs were administered to students using two methods outlined in the procedure.

5.6.2 Participants

Participants were recruited in line with the purposive sampling aims outlined in chapter three. Pre-determined inclusion and exclusion criteria were used to assess participants' eligibility for the study; these are listed below.

Inclusion criteria

- Was enrolled on a course at undergraduate level or higher at the time of participating in the study.
- The course was delivered by a publicly-funded higher education institution based in the UK.
- Had submitted and received feedback for at least one undergraduate level summative assessment.

Exclusion criteria

- Had not completed any summative assessments that included a writing component.
- Was enrolled at a higher education institution based outside of the UK.
- Was enrolled at a UK higher education institution's overseas campus.
- Was enrolled on a doctoral level course at a UK higher education institution.
- Had worked teaching students at undergraduate level for a higher education institution.

Recruitment of participants who fulfilled these criteria was facilitated through the use of two purposive recruitment strategies. Use of two strategies was necessary to recruit a diverse sample that was representative of the population; this ensured that the sample was not just representative of students at one institution, or students using a particular mode of study (e.g., on-campus or online). Data-screening was used to check that the resultant samples could be combined into one homogenous sample for analysis.

In the first strategy, the researcher identified lecturers for undergraduate and master's level programmes at a single higher education institution and contacted them by email. Consent to recruit student participants from these programmes was sought from tutors, so that the researcher could identify suitable teaching sessions to recruit from. A core module for each stage of study was selected to maximise the number of students approached to participate. This was repeated across a number of programmes and disciplines to achieve a representative multidisciplinary sample.

The second strategy was used to recruit students from other higher education institutions and reach students studying online at UK based institutions. This strategy advertised an online link to the study on publicly accessible student forums and closed discussion forums used for teaching online courses at one institution. For the online course forums, consent to post links was sought from programme leaders. Throughout the course of recruitment, the links were reposted to relevant forums; in order to maximise heterogeneity in terms of discipline, the sample was monitored and gaps in the sample profile were identified. Disciplines with low participation rates were targeted by posting to subject specific discussion boards and online forums. In addition, the studies were publicised through twitter, by requesting higher education institutions and student unions to re-tweet links to participate. Data was collected from this sample using online survey software. To ensure that participants met the inclusion and exclusion criteria, eligibility criteria were presented and prospective participants were asked to confirm their eligibility before answering the survey items. In addition to this, data screening of the demographic questionnaire was used to ensure that participants fulfilled the criteria.

These strategies recruited a multidisciplinary sample of 439 students for this study; 286 (65.1%) paper questionnaire respondents and 153 (34.9%) online survey respondents. The mean age for the sample was 24 years (SD=7.3), with a range from 18 years to 57 years. An

overview of the sample demographics is included in Table 13. In addition, a breakdown of the subjects studied by participants is included in Table 14.

Table 13. Sample demographics for study two participants

	Demographic information N(%)			
Gender	Male 127(28.9)			Female 312(71.1)
Mode of study	Campus 400(91.1)			Online 39(8.9)
Mature student	Non-mature 300(68.3)			Mature 139(31.7)
Full time/ part time	Full time 389(89.5)	Part time 44(10.0)		Missing 2(0.5)
Nationality	UK 380(86.6)	Non-UK 52(11.8)		Missing 7(1.6)
First language	English 400(91.1)	Non-English 38(8.7)		Missing 1(0.2)
Stage of study	First 140(31.9)	Second 182(41.5)	Third 79(18.0)	Master's 38(8.7)

Table 14. Subjects studied by participants in study two

Subject	Number of participants	Percentage of sample (%)
Psychology	131	29.8
Biological science	58	13.2
Forensic science	37	8.4
Education	36	8.2
Medicine & allied health disciplines	28	6.4
Music & arts	22	5.0
History & cultural studies	20	4.7
Engineering & computing	20	4.7
Business, marketing & economics	17	3.9
Law & criminology	10	2.3
Maths & physics	9	2.1
Chemical sciences	6	1.4
Politics	5	1.2
Media studies	5	1.2
English	4	0.9
Geography	4	0.9
Missing	*16*	*3.6*
Total	**439**	**100***

Note percentages do not sum to 100 due to rounding

5.6.3 Procedure

The procedure used to collect data from the test sample follows scale development procedures outlined by DeVellis (2012) and Furr (2011). At each stage, the methodological issues described in chapter three were considered in relation to the current study. In addition, alternative methods were considered to those that were used; an outline of the alternatives and a rationale for the approach adopted is included where appropriate.

Paper surveys

Suitable programmes and teaching sessions were identified using the sampling strategy outlined in section 3.7.1. Students were approached to take part in the study at the end of core lectures. A brief explanation of the research was given and those wishing to take part were given questionnaire packs. On occasions when the teaching session ended and the room remained available, participants were asked to complete the study *in situ*. When the room was required for a following session, participants were directed to a suitable location on the same site. Participants were also invited to ask questions about the research. Following the briefing, participants completed the questionnaire packs. Participants were then instructed to insert their unique identifiers and detach the debrief sheets so that they had a record of the researcher's contact details and their unique identifier code for withdrawal. The questionnaire packs were collected by the researcher. Unique identifier codes from paper consent forms were copied onto respective demographic questionnaires before separating the consent forms from the rest of the questionnaire pack; consent forms were stored in a separate location to ensure anonymity.

Online surveys

Online versions of the consent form, demographic questionnaire, item pool and debrief were developed using Lime Survey. These were collected into an online survey that presented each section separately. Pages were arranged so that each page displayed the same questions as corresponding pages in the paper version. Recruitment for this version was conducted using the strategy outlined in 3.7.1. The posting of information and recruitment for online participants began on the same day that the paper version was administered to on-campus students for the first time. The online version remained active for the duration of that semester. Responses were entered into SPSS and R project statistics for statistical analysis. Data files were stored on password protected computers to ensure security.

5.6.4 Analysis

Analysis of the questionnaire responses and removal of items was an iterative process combining the use of t-tests for data screening, reliability estimation, exploratory factor analysis and parallel analysis. A flowchart of the analytical path is given in Figure 17.

Preparation of questionnaire data

The responses to the item pool were entered into SPSS in a six point format with 6 as strongly agree and 1 as strongly disagree. Items 3, 8, 11, 20 and 45 are items with which agreement would indicate lower authorial identity based on face validity; these scores were reversed.

Instances of missing data were identified during data screening; these were replaced using multiple imputation. The multiple imputation procedure uses random sampling (with replacement) from complete cases in the dataset to estimate replacements for missing values (Rubin, 1987). This is repeated to create multiple simulated complete datasets that can be combined for further analysis. The procedure was originally designed to deal with missing survey data in large databases (Rubin, 1996); it is statistically defensible and easily accessible to the applied data analyst (Schafer and Olsen, 1998), making it the preferred method of handling missing data (Tabachnick & Fiddell, 2007).

Imputation was used with the reversed scores and the positive items to produce five new versions of the dataset with missing data replaced (note that the original 3, 8, 11, 20 and 45 scores were not included for imputation). Imputed values were constrained to whole integers with a minimum value of one and a maximum of six. An average of these datasets was used for further analyses. A sum of all positive scores and the reversed scores for negative items was also calculated.

Figure 17. Flowchart of the analysis techniques used for evaluating and removing items from the item pool

Data screening

Individual variables and total scores were tested for univariate normality by examining their means, skewness and kurtosis. Multivariate normality was assessed using this information as available tests of multivariate normality are known to be overly sensitive (Tabachnick & Fidell, 2007). In addition, these descriptive statistics were calculated for each imputation to examine the impact of multiple imputation for missing data.

In addition to checking for normality, it was important to consider the validity of using data collected online (n=153) and paper questionnaires (n=286) as one homogenous dataset. The slightly different procedures may have influenced participant responses. T-tests were used to examine whether there were significant differences in the total scores between both data collection methods.

Reliability estimation

Corrected item-total correlations were calculated by correlating each item score with the total score minus the item under examination. These were used to remove items with weak correlations to ensure that the remaining items measured a single construct reliably. In addition, internal consistency was analysed using the reliability analysis procedure in SPSS. Cronbach's (1951) alpha was used as a lower bound estimate of reliability and this statistic was examined in line with conventional practice in scale development (DeVellis, 2012). Alternative estimates of reliability were also calculated using the psych package (Revelle, 2013) in R (R Core Team, 2013).

Parallel analysis

Principal Components Analysis (PCA) was used to extract components and aid decisions about the dimensionality of the measurement model. The scree plot from this model was visually inspected to determine whether there was a clear sharp decline in factor Eigenvalues (Cattell, 1966). In addition, components extracted from this model were compared to Monte Carlo data simulated using a version of Horn's (1975) parallel analysis and Glorfeld's (1995) 95^{th} percentile criteria; this was Cho, Li and Bandalos' (2009) parallel analysis using polychoric correlations. R (R Core Team, 2013) was used to calculate these simulations and compare the empirical dataset with the random.polychor.pa package (Preshagi & Desimoni, 2013).

Extracting models

In preparation for use of dimension reduction techniques, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of sphericity were used to determine the suitability of the dataset for EFA. Use of these tests is advocated for ensuring that factor analysis is a suitable method to use (Tabachnick & Fiddell, 2007). Principal axis factoring was used to extract factor models on the basis of parallel analysis findings and the non-normal distribution of the data. These models were evaluated in relation to simple structure with the aid of oblique oblimin rotation; when a suitable model with simple structure was identified. An oblique rotation was used as the factors were hypothesised to be correlated. Inter-factor correlations were also calculated to identify whether this was the case. The pattern matrix loadings were examined to identify items that did not load strongly onto any of the factors in the model; these items were removed. Principal factor analysis with an oblimin rotation was used to extract factors for the remaining dataset, and the process was repeated until simple structure was achieved. SPSS was used to carry out factor extraction and rotation.

Evaluating the final items

The distributions of scores for retained items were examined to check for normal distribution. Reliability estimates were calculated for the retained items and for the factors that were extracted. In addition to Cronbach's α that was used in the item reduction, other reliability lower bound estimates were calculated. Factor estimates were based only on items loading >.45 onto the corresponding factor. Revelle's (1979) β, McDonald's (1978;1999) ω_h and ω_t, Guttman's (1945) λ_4, and Bentler and Woodward's (1980) greatest lower bound (glb) are reported alongside Cronbach's (1951) α. In addition, parallel analysis was used to confirm the dimensionality of the remaining items. These analyses were conducted using R project statistics.

Following the statistical analyses, the factors were interpreted in relation to items that loaded on them moderately to strongly (> .45). A panel of three researchers examined the factors and the items that loaded onto them; they labelled each factor on the basis of the corresponding items, previous research from the literature (e.g., Abasi et al., 2006; Elander et al., 2010; Pittam et al., 2009) and the findings from study one.

5.6.5 Results

Data preparation and screening of questionnaire data

Missing data appeared to be randomly missed items from the paper surveys; there was no missing data for online responses as the software flagged omitted responses for participants. The missing values represented .49% of the total dataset. Missing values analysis was conducted to check for patterns of systematically omitted responses. This showed that all of the cases had less than 5% of data missing and that all variables had less than 5% of data missing. These amounts of missing data are regarded as small when referring to contemporary guidelines for dealing with missing data (e.g., Graham, 2009). Therefore, further inferential tests were not conducted to explore the missing values. Tabachnick and Fiddell (2007) suggest that multiple imputation is acceptable for dealing with small amounts of missing data (< 5%), so missing data was replaced using this method; all following analyses were conducted on an averaged dataset from the imputations. Analyses were also run on each separate imputation and the original dataset with missing data omitted listwise; this was done to check that multiple imputation did not produce significantly different results. These showed that the imputation procedure did not impact results, but reporting of the separate analyses has been omitted for brevity.

Total scores across the measure were calculated by summing the items. Means, SDs and distribution statistics for individual items and the total score are shown in Table 15. These descriptive statistics suggest that the total score is normally distributed (range=114 to 270), but a number of items show significant kurtosis. Standardised skewness and kurtosis scores were also calculated as z-scores; Field (2013) recommends using critical values of ±2.58 when evaluating these scores in large samples. As a number of variables had $Z_{skewness}$ and $Z_{kurtosis}$ scores beyond these critical boundaries, the dataset was treated as multivariate non-normal.

Table 15. Univariate descriptive statistics for individual item scores.

Item no.		Mean	SD	Skewness	$Z_{skewness}$	Kurtosis	$Z_{kurtosis}$
1	I think about the way that I present myself to the reader when I write.	4.95	.87	-1.08	-9.27	2.08	8.95
2	I have my own style of academic writing.	4.62	.95	-.84	-7.19	1.00	4.30
3	I do not think about how well I write.	4.63	1.33	-1.05	-8.97	.32	1.38
4	I try to use appropriate language when writing academically.	5.39	.68	-1.42	-12.21	4.15	17.86
5	I maintain a strand of thought throughout a piece of writing.	4.66	.96	-1.01	-8.67	1.43	6.14
6	Being able to write clearly is an important part of being a graduate.	5.45	.73	-1.65	-14.15	3.82	16.41
7	My written work shows my understanding of the subject.	4.98	.97	-1.44	-12.34	3.11	13.37
8	I write essays only for the sake of gaining a grade.	3.16	1.46	.20	1.68	-1.02	-4.38
9	I am able to document my ideas clearly in my writing.	4.45	1.01	-.93	-7.97	1.05	4.51
10	What I write communicates my confidence about the area to the reader.	4.59	.98	-1.09	-9.35	2.05	8.80
11	I am afraid of putting my own views in my writing because they could be wrong.	3.82	1.38	-.20	-1.68	-.90	-3.87
12	It is important to me that my essays are well written.	5.33	.79	-1.16	-9.97	1.33	5.71
13	Academic work I have written is recognisable as mine.	4.59	.97	-.40	-3.45	-.12	-.53
14	My assignments include aspects of my personal creativity.	4.13	1.15	-.42	-3.60	-.22	-.95
15	I think of myself as an author.	2.77	1.37	.57	4.86	-.59	-2.53
16	I have pride in the end product of my writing.	4.55	1.03	-.68	-5.88	.63	2.70
17	I am concerned with how well I have written my academic work.	5.10	.93	-1.18	-10.11	1.73	7.43
18	I feel that I am the author of my assignments.	4.51	1.21	-.91	-7.84	.61	2.63
19	I try to produce something that will be different to the essays that fellow students will write.	4.43	1.14	-.61	-5.25	-.03	-.14
20	Only people who write books are authors.	4.27	1.36	-.66	-5.68	-.32	-1.37
21	Writing allows me to explore the way that I think about things.	4.39	1.07	-.71	-6.12	.55	2.36
22	The people who write the journal articles I read are authors.	4.82	1.04	-1.14	-9.75	1.64	7.05
23	It is important that my writing is easy to understand.	5.27	.70	-.83	-7.10	1.16	5.00
24	I consider the audience I am writing for.	4.85	.96	-.89	-7.63	.99	4.26
25	Writing an assignment is all about making an argument based on my own thoughts about the subject.	3.89	1.24	-.43	-3.65	-.37	-1.57
26	I identify with the role of author when writing my assignments.	3.73	1.16	-.37	-3.13	-.26	-1.14
27	Academic writing is an important skill.	5.42	.76	-1.70	-14.57	5.02	21.59
28	I feel attached to my work.	4.56	1.19	-.79	-6.81	.21	.92
29	I am constantly improving my academic writing.	4.73	.96	-.82	-7.05	1.16	4.97
30	I try to ensure that an essay I write includes an element of my own thought.	4.84	.86	-.68	-5.81	.79	3.40
31	I have thought about how well I write academically.	5.05	.82	-1.09	-9.39	2.01	8.65
32	I express other people's ideas well in my own words.	4.49	.96	-.87	-7.50	1.36	5.87
33	I have my own writing style.	4.63	.97	-.90	-7.70	1.44	6.17

34	I generate ideas while I am writing.	4.94	.87	-.91	-7.85	1.42	6.09
35	I feel that I own my written work.	4.86	.97	-.86	-7.41	1.06	4.54
36	I have my own voice in my writing.	4.56	.98	-.64	-5.50	.47	2.01
37	I feel in control when writing assignments.	4.28	1.12	-.87	-7.51	.73	3.12
38	I am able to formulate my ideas in my writing.	4.49	.99	-.96	-8.25	1.60	6.89
39	It would upset me if somebody used the words I had written in their work.	4.34	1.46	-.60	-5.11	-.67	-2.90
40	Academic writing allows me to communicate my ideas.	4.65	.92	-1.08	-9.23	2.28	9.82
41	I consider myself to be the author of my academic work.	4.39	1.21	-.73	-6.25	.16	.68
42	My assignments reflect my thinking about a topic.	4.67	.93	-1.16	-9.96	2.41	10.39
43	My ability to write academically is important to me.	5.13	.89	-1.08	-9.24	1.43	6.14
44	My assignments are based on ideas that belong to me.	4.10	1.04	-.40	-3.45	.06	.25
45	I feel afraid to put my own thoughts in my academic writing.	3.84	1.30	-.16	-1.38	-.81	-3.50
46	Academic writing is all about communicating concepts to a reader.	4.83	.80	-.64	-5.48	1.35	5.82
47	It is important to me to keep developing as an academic writer.	5.18	.87	-1.12	-9.62	1.62	6.97
Total score		*215.36*	*23.67*	*-.40*	*-3.42*	*.49*	*2.10*

An independent samples t-test (t(437)=1.21, p=.23) did not suggest that there was a significant difference between the total scores of the online participants (mean = 232.20, SD = 25.75) and the paper participants (mean = 229.18, SD = 24.64). As a result, the data was analysed as a single dataset.

Reliability Estimation

Cronbach's (1951) α and corrected item-total correlation coefficients were calculated for all 47 items in the scale. Cronbach's α was .93, suggesting that the items had a high level of internal consistency. Table 16 shows the Cronbach's α if item deleted and corrected item-total correlations for individual items.

Although these results suggest that Cronbach's α would not be increased by the removal of items, a number of the corrected item-total correlations were weak to moderate in strength, suggesting that these items were not strongly associated with the overall construct measured by other items in the scale. Items with corrected item-total correlation coefficients below .40 were removed from further analysis; this removed 14 items, leaving data from 33 items. The items removed were item 25(r=.14), item 11(r=.24), item 20(r=.25), item 17(r=.26), item 45(r=.27), item 8(r=.30), item 22(r=.30), item 46(r=.31), item 3(r=.33), item 39(r=.33), item 23(r=.36), item 13(r=.38), item 15(r=.38), and item 4(r=.39); this included all five reverse scored items.

Cronbach's α, total scores and corrected item-total correlations were recalculated for the 33 remaining items (Table 17); α=.94, total score mean=154.64 (SD=18.53, range=68 to 196). This analysis showed that the remaining items had corrected item-total correlations above .40, suggesting that all items were at least moderately correlated with a single construct. In addition, removal of these items did not have a detrimental effect on the Cronbach's α for the scale. Univariate descriptive statistics were used to assess normality of data from the remaining items; these showed that some of the retained variables were kurtosed. The dataset continued to be treated as multivariate non-normal for following analyses.

Table 16. Corrected item-total correlation coefficients and Cronbach's α if the item were deleted for the administered item pool.

Item no.	Item content	Corrected item-total correlation coefficient	Cronbach's α if item deleted
1	I think about the way that I present myself to the reader when I write.	.43	.93
2	I have my own style of academic writing.	.46	.93
3	I do not think about how well I write.	.33	.93
4	I try to use appropriate language when writing academically.	.39	.93
5	I maintain a strand of thought throughout a piece of writing.	.44	.93
6	Being able to write clearly is an important part of being a graduate.	.44	.93
7	My written work shows my understanding of the subject.	.50	.93
8	I write essays only for the sake of gaining a grade.	.32	.93
9	I am able to document my ideas clearly in my writing.	.61	.93
10	What I write communicates my confidence about the area to the reader.	.55	.93
11	I am afraid of putting my own views in my writing because they could be wrong.	.24	.93
12	It is important to me that my essays are well written.	.54	.93
13	Academic work I have written is recognisable as mine.	.38	.93
14	My assignments include aspects of my personal creativity.	.49	.93
15	I think of myself as an author.	.38	.93
16	I have pride in the end product of my writing.	.59	.93
17	I am concerned with how well I have written my academic work.	.26	.93
18	I feel that I am the author of my assignments.	.50	.93
19	I try to produce something that will be different to the essays that fellow students will write.	.47	.93
20	Only people who write books are authors.	.25	.93
21	Writing allows me to explore the way that I think about things.	.58	.93
22	The people who write the journal articles I read are authors.	.30	.93
23	It is important that my writing is easy to understand.	.36	.93
24	I consider the audience I am writing for.	.51	.93
25	Writing an assignment is all about making an argument based on my own thoughts about the subject.	.14	.93
26	I identify with the role of author when writing my assignments.	.50	.93
27	Academic writing is an important skill.	.47	.93
28	I feel attached to my work.	.63	.92
29	I am constantly improving my academic writing.	.53	.93
30	I try to ensure that an essay I write includes an element of my own thought.	.51	.93
31	I have thought about how well I write academically.	.55	.93
32	I express other people's ideas well in my own words.	.44	.93
33	I have my own writing style.	.53	.93
34	I generate ideas while I am writing.	.48	.93

35	I feel that I own my written work.	.56	.93
36	I have my own voice in my writing.	.60	.93
37	I feel in control when writing assignments.	.61	.93
38	I am able to formulate my ideas in my writing.	.64	.92
39	It would upset me if somebody used the words I had written in their work.	.33	.93
40	Academic writing allows me to communicate my ideas.	.66	.92
41	I consider myself to be the author of my academic work.	.59	.93
42	My assignments reflect my thinking about a topic.	.60	.93
43	My ability to write academically is important to me.	.56	.93
44	My assignments are based on ideas that belong to me.	.40	.93
45	I feel afraid to put my own thoughts in my academic writing.	.27	.93
46	Academic writing is all about communicating concepts to a reader.	.31	.93
47	It is important to me to keep developing as an academic writer.	.52	.93

Table 17. Corrected item-total correlation coefficients and Cronbach's α if item deleted for dataset after weak item-total correlations were removed (33 item dataset).

Item no.	Item content	Corrected item-total correlation coefficient	Cronbach's α if item deleted
1	I think about the way that I present myself to the reader when I write.	.44	.93
2	I have my own style of academic writing.	.47	.93
5	I do not think about how well I write.	.45	.93
6	I try to use appropriate language when writing academically.	.45	.93
7	I maintain a strand of thought throughout a piece of writing.	.50	.93
9	Being able to write clearly is an important part of being a graduate.	.62	.93
10	My written work shows my understanding of the subject.	.56	.93
12	I write essays only for the sake of gaining a grade.	.53	.93
14	I am able to document my ideas clearly in my writing.	.50	.93
16	What I write communicates my confidence about the area to the reader.	.59	.93
18	I am afraid of putting my own views in my writing because they could be wrong.	.48	.93
19	It is important to me that my essays are well written.	.46	.93
21	Academic work I have written is recognisable as mine.	.57	.93
24	My assignments include aspects of my personal creativity.	.52	.93
26	I think of myself as an author.	.51	.93
27	I have pride in the end product of my writing.	.48	.93
28	I am concerned with how well I have written my academic work.	.64	.93
29	I feel that I am the author of my assignments.	.54	.93
30	I try to produce something that will be different to the essays that fellow students will write.	.51	.93
31	Only people who write books are authors.	.54	.93
32	Writing allows me to explore the way that I think about things.	.45	.93
33	The people who write the journal articles I read are authors.	.54	.93
34	It is important that my writing is easy to understand.	.49	.93
35	I consider the audience I am writing for.	.57	.93
36	Writing an assignment is all about making an argument based on my own thoughts about the subject.	.62	.93
37	I identify with the role of author when writing my assignments.	.64	.93
38	Academic writing is an important skill.	.65	.93
40	I feel attached to my work.	.67	.93
41	I am constantly improving my academic writing.	.57	.93
42	I try to ensure that an essay I write includes an element of my own thought.	.60	.93
43	I have thought about how well I write academically.	.56	.93
44	I express other people's ideas well in my own words.	.40	.93
47	I have my own writing style.	.52	.93

Dimension reduction

The Kaiser Meyer Olkin (KMO) measure and Bartlett's Test of sphericity were calculated to ensure that factor analysis was suitable with the dataset. These measures (KMO=.929; Bartlett's chi square (528) =6460.239, p<.001) indicated that the data was suitable for factor analysis.

In line with recommendations to use Principal Components Analysis (PCA) for data screening purposes, even if the intention is to use Factor Analysis (FA) to extract a final model (Velicer et al., 2000; Tabachnick & Fidell, 2007), initial analysis was conducted using PCA. A component model was extracted using the Kaiser Eigenvalue greater than one rule (Kaiser, 1960) to obtain Eigenvalues and a scree plot; this identified six possible factors. This was considered high and is in line with current literature suggesting that the Eigenvalue over 1 rule tends to over factor (Hayton et al., 2004). The scree plot (Figure 18) was examined with caution to aid interpretation of the output. This indicated possible cut-offs at three or seven factors; two other researchers agreed with this interpretation of the scree diagram. Eigenvalues for the first seven components extracted from initial PCA are given in Table 18. The seventh component had an Eigenvalue of .93, indicating that only six components had Eigenvalues greater than one.

Figure 18. Scree plot from initial PCA extraction using the Kaiser (1960) Eigenvalue > 1 rule.

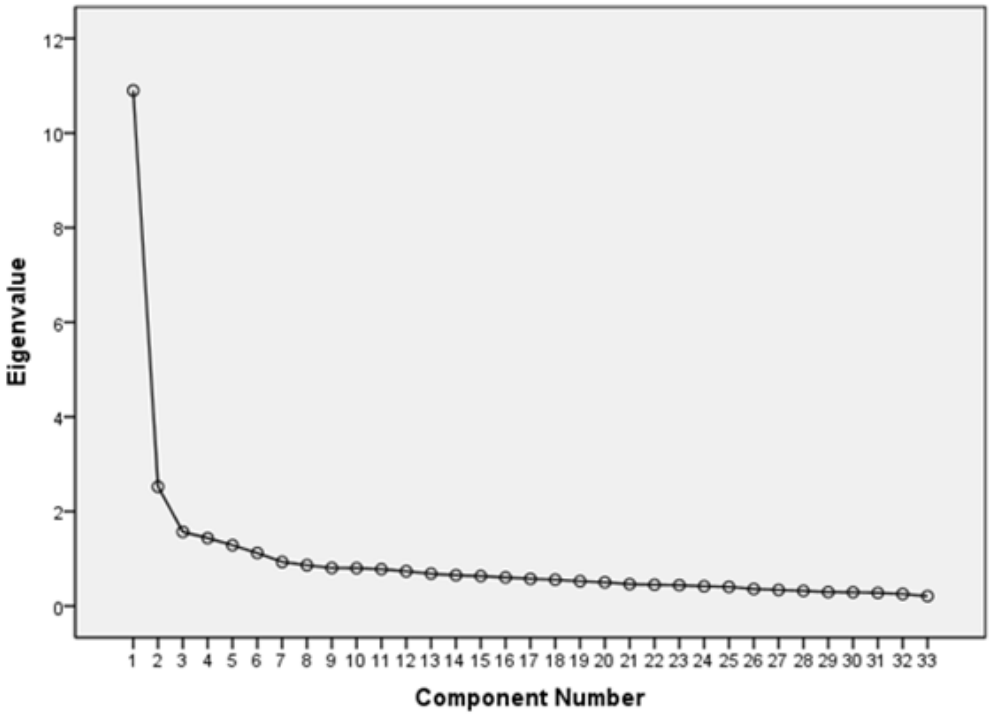


Table 18. Eigenvalues and variance for components extracted using Eigenvalue>1 and PCA.

Component	Eigenvalue	% of variance	Cumulative % of variance
1	10.96	33.21	33.21
2	2.51	7.60	40.80
3	1.57	4.75	45.55
4	1.45	4.39	49.94
5	1.27	3.85	53.80
6	1.13	3.42	57.21
7	.94	2.86	60.07

Polychoric parallel analysis (Cho et al., 2009) was used as an alternative method of identifying the number of factors to extract. This procedure calculated a polychoric correlation matrix for the dataset and extracted a PCA model with Eigenvalues; these were then compared to Eigenvalues extracted from 100 iterations of random simulated data. This suggested that three components had Eigenvalues greater than the 95th percentile Eigenvalues from the simulated datasets. Table 19 shows the Eigenvalues of the first four empirical components and the 95th percentile simulated components.

Table 19. Eigenvalues for components extracted from the dataset and 95th percentile Eigenvalues for components extracted from 100 iterations of simulated data.

Component	Eigenvalues	
	Polychoric PCA of the dataset	Polychoric PCA of random simulated data.
1	12.69	1.67
2	2.64	1.57
3	1.63	1.50
4	1.41*	1.46

*Eigenvalue for component extracted from the empirical dataset lower than the Eigenvalue extracted from the simulated dataset.

In accordance with the findings of parallel analysis, three factors were extracted from the dataset using EFA. Principal axis factoring (PAF) was used as the data was non-normally distributed (Tabachnick & Fidell, 2007). The extracted factors were rotated using an oblique rotation to aid interpretation. The pattern matrix was used to examine item factor loadings following this procedure, because loadings represent the unique contributions of each factor to the item variance. Although the structure matrix can be used to interpret FA after oblique rotation, it is not advised when the factors are hypothesised to be correlated, as the values in a structure matrix are inflated by the relationships between factors. Factor loadings from the rotated pattern matrix are given in Table 20.

Table 20. Pattern Matrix with direct oblimin rotation following PAF extraction of three factors from the 33 item dataset (loadings below .45 have been suppressed)

Item no.	Item content	Factor 1	Factor 2	Factor 3
09	I am able to document my ideas clearly in my writing.	.81		
38	I am able to formulate my ideas in my writing.	.69		
37	I feel in control when writing assignments.	.65		
10	What I write communicates my confidence about the area to the reader.	.59		
36	I have my own voice in my writing.	.54		
40	Academic writing allows me to communicate my ideas.	.52		
02	I have my own style of academic writing.	.51		
33	I have my own writing style.	.51		
07	My written work shows my understanding of the subject.	.51		
16	I have pride in the end product of my writing.	.49		
34	I generate ideas while I am writing.	.48		
24	I consider the audience I am writing for.	.45		
32*	I express other people's ideas well in my own words.			
05*	I maintain a strand of thought throughout a piece of writing.			
42*	My assignments reflect my thinking about a topic.			
30*	I try to ensure that an essay I write includes an element of my own thought.			
29*	I am constantly improving my academic writing.			
01*	I think about the way that I present myself to the reader when I write.			
43	My ability to write academically is important to me.		.80	
47	It is important to me to keep developing as an academic writer.		.75	
27	Academic writing is an important skill.		.61	
06	Being able to write clearly is an important part of being a graduate.		.53	
12	It is important to me that my essays are well written.		.52	
31*	I have thought about how well I write academically.			
41	I consider myself to be the author of my academic work.			.72
18	I feel that I am the author of my assignments.			.64
26	I identify with the role of author when writing my assignments.			.56
44	My assignments are based on ideas that belong to me.			.55
14	My assignments include aspects of my personal creativity.			.53
35	I feel that I own my written work.			.51
19*	I try to produce something that will be different to the essays that fellow students will write.			
28*	I feel attached to my work.			
21*	Writing allows me to explore the way that I think about things.			

*Item did not load onto any factors at .45 or higher.

This extracted model had a stable structure with no-cross loadings. Examination of the items and factor loadings suggested that the first factor related to confidence regarding aspects of writing, the second factor referred to the importance of writing, and the third factor was related to personal aspects of authorial identity. However, there were a number of items that did not load onto any of the three factors.

Although Stevens (2009) has cautioned against using arbitrary boundaries for dropping items, a stringent retention criteria of .45 was suitable on the basis of simulation studies by Guadagnoli and Velicer (1988). Although .32 is considered a minimum cut-off point, oblique

rotation can inflate loadings artificially (Tabachnick & Fidell, 2007). In addition, Comrey and Lee (1992) suggest that loadings of .45 can be interpreted as fair, whereas .32 is considered to be poor. In line with these recommendations, items without a factor loading > .45 (n=10) were removed and FA was used to extract a revised model (KMO=.911, Bartlett's chi square (253) = 4366.38, p<.001). Factor loadings for this revised model are shown in Table 21.

Table 21. Pattern Matrix with direct oblimin rotation following PAF extraction of three factors from the 23 item dataset (loadings below .45 have been suppressed)

Item no.	Item content	Factor 1	2	3
09	I am able to document my ideas clearly in my writing.	.75		
38	I am able to formulate my ideas in my writing.	.66		
37	I feel in control when writing assignments.	.63		
36	I have my own voice in my writing.	.62		
10	What I write communicates my confidence about the area to the reader.	.58		
33	I have my own writing style.	.58		
40	Academic writing allows me to communicate my ideas.	.52		
02	I have my own style of academic writing.	.51		
34	I generate ideas while I am writing.	.48		
16*	I have pride in the end product of my writing.			
07*	My written work shows my understanding of the subject.			
24*	I consider the audience I am writing for.			
43	My ability to write academically is important to me.		.80	
47	It is important to me to keep developing as an academic writer.		.70	
27	Academic writing is an important skill.		.62	
06	Being able to write clearly is an important part of being a graduate.		.58	
12	It is important to me that my essays are well written.		.55	
41	I consider myself to be the author of my academic work.			.80
18	I feel that I am the author of my assignments.			.68
26	I identify with the role of author when writing my assignments.			.52
35	I feel that I own my written work.			.52
44*	My assignments are based on ideas that belong to me.			
14*	My assignments include aspects of my personal creativity.			

*Item did not load onto any factors at .45 or higher.

This revised model had a further five items without factor loadings > .45; these were removed from the analysis and FA extraction was conducted again using the same parameters (KMO=.898, Bartlett's chi square (153) = 3370.43, p<.001). The extracted model showed 18 items that all loaded at > .45 with one factor; there were no cross loadings when only considering loadings of .45 or higher (see Table 22.).

Table 22. Pattern Matrix with direct oblimin rotation following PAF extraction of three factors from the 18 item dataset (loadings below .45 have been suppressed)

Item no.	Item content	Factor 1	2	3
36	I have my own voice in my writing.	.72		
33	I have my own writing style.	.66		
38	I am able to formulate my ideas in my writing.	.66		
37	I feel in control when writing assignments.	.64		
09	I am able to document my ideas clearly in my writing.	.64		
02	I have my own style of academic writing.	.57		
40	Academic writing allows me to communicate my ideas.	.53		
34	I generate ideas while I am writing.	.48		
10	What I write communicates my confidence about the area to the reader.	.48		
43	My ability to write academically is important to me.		.84	
47	It is important to me to keep developing as an academic writer.		.75	
27	Academic writing is an important skill.		.68	
06	Being able to write clearly is an important part of being a graduate.		.61	
12	It is important to me that my essays are well written.		.58	
41	I consider myself to be the author of my academic work.			.89
18	I feel that I am the author of my assignments.			.72
35	I feel that I own my written work.			.48
26	I identify with the role of author when writing my assignments.			.46

The model extracted from these 18 items achieve simple structure as there were no cross-loadings and each item loaded above .45 onto one factor. The 18 items were then inspected by the content validity panel (n=3) to examine all of the items together, and the items for individual factors; this identified two items with very similar wordings in factor one: item 02, "I have my own style of academic writing." and item 33, "I have my own writing style". It was decided to examine the factor structure with one of these items removed to reduce redundancy. Item 02's wording was specific to the context of academic writing, so the more general item 33 was removed. Principal axis factoring FA was used to analyse the structure of this re-specified model (KMO=.902, Bartlett's chi square (136) = 3065.25, $p<.001$); the pattern matrix is given in Table 23.

The re-specified 17 item model showed simple structure with factor loadings above .45. The content validity panel (n=3) examined the items with their factor loadings and agreed that they formed a measure of student authorial identity; these items were retained as the Student Attitudes and Beliefs about Authorship Scale (SABAS) with three subscales based on the factors.

Table 23. Pattern Matrix with direct oblimin rotation following PAF extraction of three factors from the 17 item dataset (loadings below .45 have been suppressed)

Item no.	Item content	Factor 1	2	3
38	I am able to formulate my ideas in my writing.	.76		
37	I feel in control when writing assignments.	.73		
09	I am able to document my ideas clearly in my writing.	.69		
36	I have my own voice in my writing.	.67		
40	Academic writing allows me to communicate my ideas.	.57		
10	What I write communicates my confidence about the area to the reader.	.53		
34	I generate ideas while I am writing.	.46		
02	I have my own style of academic writing.	.45		
43	My ability to write academically is important to me.		.84	
47	It is important to me to keep developing as an academic writer.		.78	
27	Academic writing is an important skill.		.69	
06	Being able to write clearly is an important part of being a graduate.		.60	
12	It is important to me that my essays are well written.		.55	
41	I consider myself to be the author of my academic work.			.89
18	I feel that I am the author of my assignments.			.72
35	I feel that I own my written work.			.50
26	I identify with the role of author when writing my assignments.			.45

Evaluating the remaining items

Cronbach's α (.89), α if item deleted and corrected item-total correlations were recalculated for the 17 remaining items (Table 24). Item-total correlations were moderate to strong, suggesting that the items related to a single construct; this was conceptualised as authorial identity and theorised to be a latent variable underlying the factors.

Table 24. Cronbach's α if item deleted and corrected item-total coefficients for the 17 retained items

Item number	Corrected item-total correlation coefficient	Cronbach's α if item deleted
Item 2	.42	.89
Item 6	.46	.89
Item 9	.60	.88
Item 10	.54	.88
Item 12	.50	.89
Item 18	.49	.89
Item 26	.47	.89
Item 27	.50	.89
Item 34	.45	.89
Item 35	.57	.88
Item 36	.59	.88
Item 37	.64	.88
Item 38	.65	.88
Item 40	.65	.88
Item 41	.58	.88
Item 43	.57	.88
Item 47	.51	.89

Alternative reliability estimates for the 17 item scale, and for each separate factor, were calculated using R project statistics package. Individual factors were conceptualised as containing only the items that loaded at .45 or higher. A total score was obtained by summing the responses across items. Scores for each factor were calculated by summing scores across all items that loaded onto the factor at > .45. Descriptive statistics showed that these scores were normally distributed (Table 25), making them suitable for use with parametric tests to examine differences between groups.

Table 25. Descriptive statistics of factor scores from summed item scores

Summed item Factor score	Mean	SD	Skewness	Kurtosis	Observed Range
Factor 1	36.60	6.08	-.76	1.46	11 to 48
Factor 2	26.52	3.18	-1.30	2.56	9 to 30
Factor 3	17.50	3.57	-.71	.79	4 to 24
Total score	80.62	9.99	-.74	1.18	33 to 102

Visual inspection of histograms confirmed the normal distribution for total scores (Figure 19), factor 1 scores (Figure 20), factor 2 scores (Figure 21), and factor 3 scores (Figure 22). Division by the number of contributing items was used to average scores. Mean averaged scores, Cronbach's α, and alternative reliability estimates are presented in Table 26.

Figure 19. Total summed score distributions across all 17 retained items.

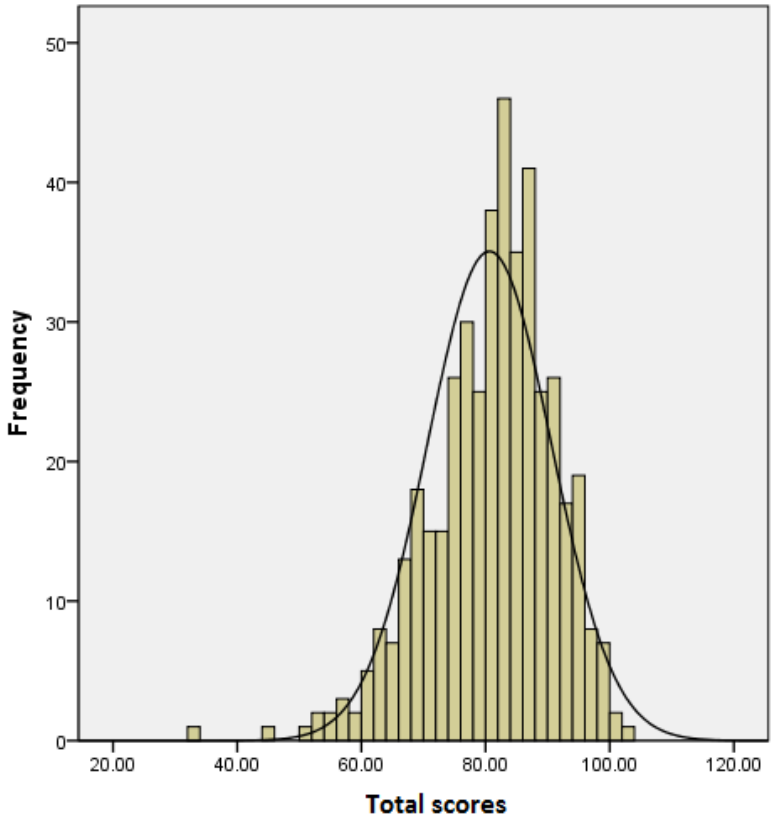


Figure 20. Total summed score distributions across 8 items loading onto factor 1.

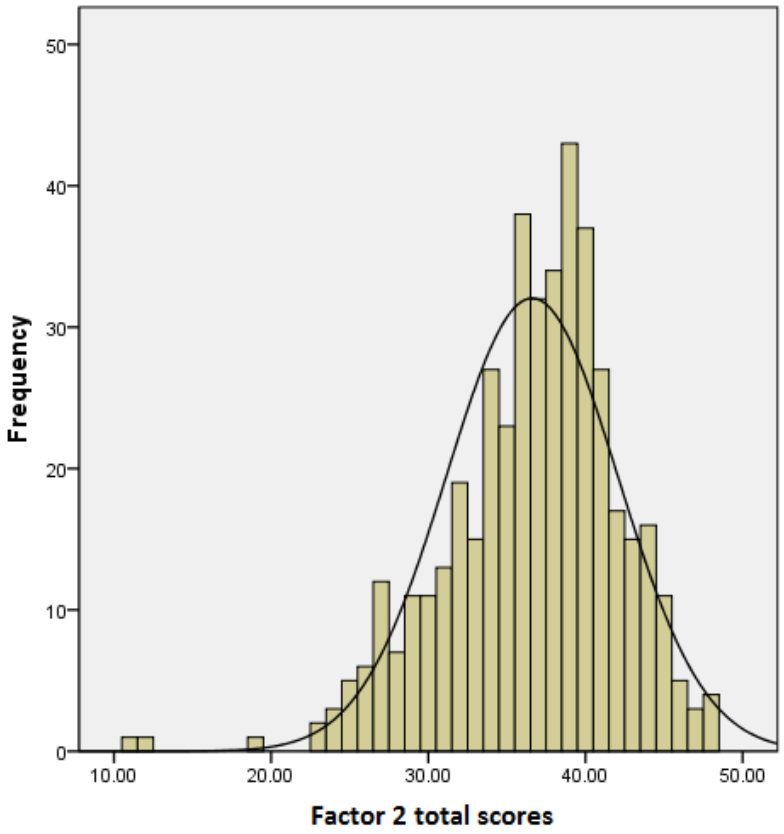


Figure 21. Total summed score distributions across 5 items loading onto factor 2.

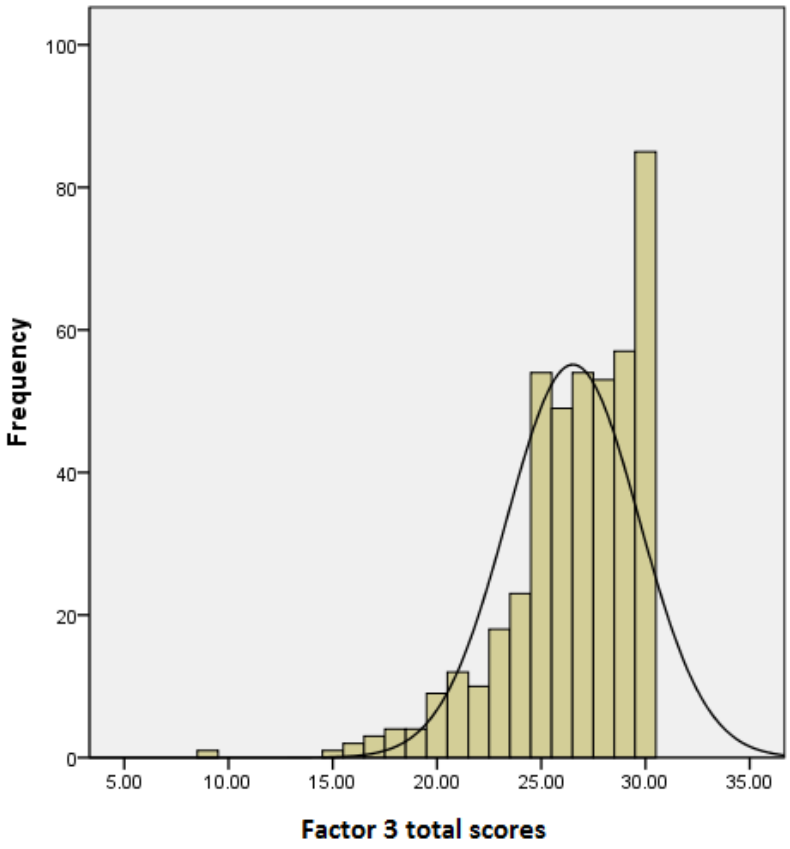


Figure 22. Total summed score distributions across 4 items loading onto factor 3.

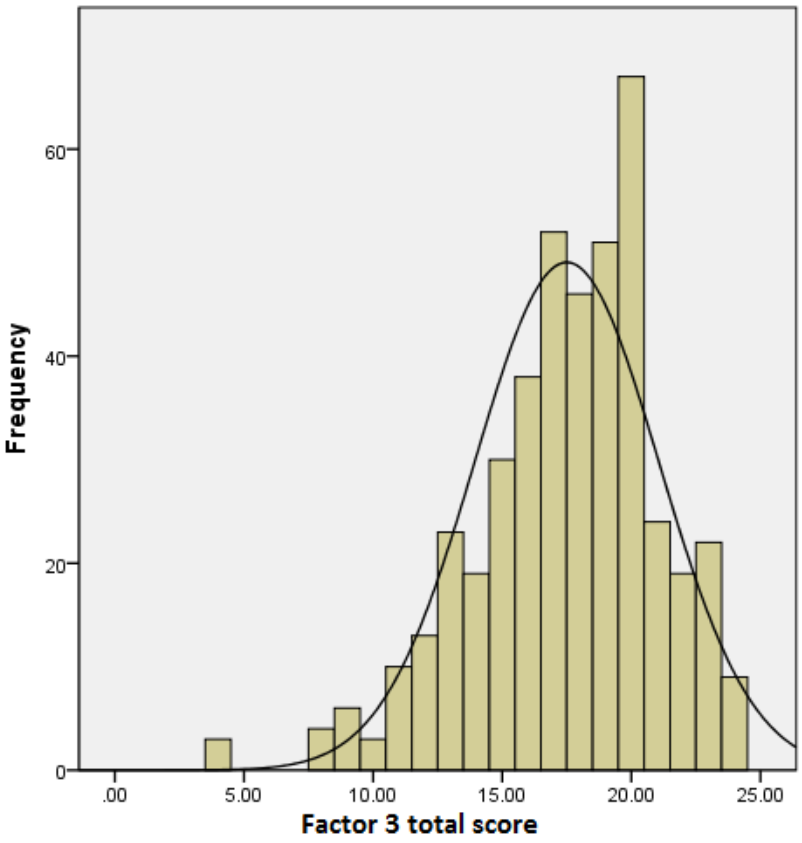


Table 26. Reliability estimates for remaining items and factors when only including items with loadings> .45

	Cronbach's α	**Revelle's** β	**McDonald's** ω_h	**Mcdonald's** ω_t	**Bentler & Woodward's** *glb*	**Guttman's** λ_4	**Mean averaged score (SD)**
All items (n=17)	.89	.70	.70	.92	.93	.90	4.74 (.60)
Factor (n of items)							
1 (n=8)	.85	.70	.72	.88	.89	.84	4.58 (.68)
2 (n=5)	.84	.77	.80	.89	.86	.81	5.30 (.64)
3 (n=4)	.79	.68	.78	.84	.80	.80	4.37 (.89)

These high estimates of reliability suggest that the 17 items collectively, and the individual subscales, are internally consistent. The reporting of high values for multiple coefficients provides strong evidence for the reliability of these items (Zinbarg et al., 2005). A scree plot for the final model extracted using 17 items is given in Figure 23. Examination of this plot is ambiguous using Cattell's (1966) method. The suitability of a three factor model was checked by performing polychoric parallel analysis (Cho et al., 2009) on the dataset with the remaining 17 items. This indicated that a model with three dimensions was suitable (Table 27).

Figure 23. Scree plot of principal axis factoring for remaining 17 items

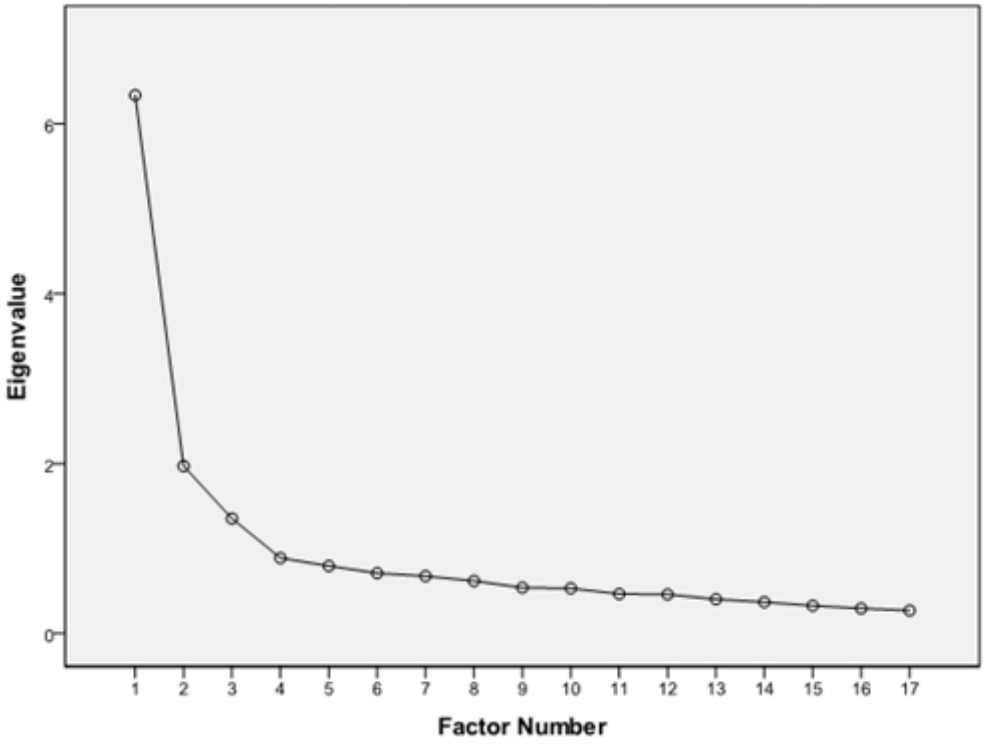


Table 27. Eigenvalues for components extracted from the 17 item dataset and 95th percentile Eigenvalues for components extracted from 100 iterations of simulated data

Component	Eigenvalues	
	Polychoric PCA of the dataset	Polychoric PCA of random simulated data
1	7.28	1.45
2	2.02	1.35
3	1.37	1.29
4	.84*	1.23

*Eigenvalue for component extracted from the empirical dataset lower than the Eigenvalue extracted from the simulated dataset.

Factor correlations were calculated to examine the relationship between factors. Weak to moderately strong positive correlations were identified between the factors (see Table 28.), suggesting that the factors were related as hypothesised; this confirmed that oblique rotation was appropriate, and interpretation of the pattern matrices was suitable.

Table 28. Correlation matrix of extracted factors from the final 17 item dataset

Factor	1	2	3
1	1.00	.51	.55
2		1.00	.36
3			1.00

Summed square loadings before and after oblique rotation are given in Table 29. Due to the use of oblique rotation to identify factors, squaring these only gives a rough estimate of the shared variance accounted for by each factor (Tabachnick & Fidell, 2007). It should also be noted that the sum of these estimates do not represent the cumulative percentage of shared variance accounted for by the model, because the use of oblique rotation means that there is considerable overlap between factors.

Table 29. Eigenvalues, and summed square loadings before and after oblique rotation

Factor	Eigenvalue	Summed squared loadings	Rotated summed square loadings	Estimate of shared variance (%)
1	6.34	5.85	5.02	34.39
2	1.97	1.52	3.93	8.93
3	1.35	.91	3.41	5.34

Factors were interpreted by examining the content of items that loaded at .45 or higher (see Table 30). Factor one was labelled as authorial confidence, factor two as valuing writing and factor three as identification with author. The 17 items were collated together as the Student Attitudes and Beliefs about Authorship Scale (SABAS) and items were renumbered from 1-17; they are listed in Table 30 with their factor loadings and SABAS numbers. The item content for the original 106 items in the generated pool is available in Appendix 9; a key of each item's performance and reason for non-retention is included where applicable.

Table 30. Item content and factor loadings for the 17 retained items of the SABAS

Factor Item	Factor label Item content	Factor loading	SABAS number
Factor 1	**Authorial Confidence**		
Item 2	I have my own style of academic writing.	.57	1
Item 9	I am able to document my ideas clearly in my writing.	.64	3
Item 10	What I write communicates my confidence about the area to the reader.	.48	4
Item 34	I generate ideas while I am writing.	.48	9
Item 36	I have my own voice in my writing.	.72	11
Item 37	I feel in control when writing assignments.	.64	12
Item 38	I am able to formulate my ideas in my writing.	.66	13
Item 40	Academic writing allows me to communicate my ideas.	.53	14
Factor 2	**Valuing Writing**		
Item 6	Being able to write clearly is an important part of being a graduate.	.61	2
Item 12	It is important to me that my essays are well written.	.58	5
Item 27	Academic writing is an important skill.	.68	8
Item 43	My ability to write academically is important to me.	.84	16
Item 47	It is important to me to keep developing as an academic writer.	.75	17
Factor 3	**Identification with Author**		
Item 18	I feel that I am the author of my assignments.	.72	6
Item 26	I identify with the role of author when writing my assignments.	.46	7
Item 35	I feel that I own my written work.	.48	10
Item 41	I consider myself to be the author of my academic work.	.89	15

The SPSS regression procedure was used to calculate standardised factor scores with a mean of zero for the three factors. The descriptive statistics for these scores show that they are normally distributed (Table 31).

Table 31. Descriptive statistics of regressed factor scores

Regressed Factor score	SD	Skewness	Kurtosis	Range
Factor 1	.94	-.77	1.31	-4.54 to 1.92
Factor 2	.93	-1.28	2.61	-1.25 to 5.17
Factor 3	.92	-.70	.46	-3.40 to 1.60

Averaged scores for each factor were also calculated by summing scores across all items that loaded onto the factor at > .45 and dividing this total by the number of items. In addition, total scores were calculated by summing the scores for all 17 retained items and dividing by 17. Descriptive statistics showed that these scores were normally distributed (Table 32).

Table 32. Descriptive statistics of averaged factor scores

Averaged factor scores	Mean	SD	Skewness	Kurtosis	Range	N of items
Factor 1	4.74	.62	-.80	1.83	1.63 to 6.00	8
Factor 2	5.30	.64	-1.30	2.56	1.80 to 6.00	5
Factor 3	4.37	.89	-.71	.79	1.00 to 6.00	4
Total score	*4.75*	*.58*	*-.73*	*1.28*	*1.94 to 6.00*	*17*

Correlation between the two types of factor scores showed that averaged factor scores were highly correlated with the regressed factor scores for factor 1 ($r(437)=.99$, $p<.01$), factor 2 ($r(437)=.98$, $p<.01$), and factor 3 ($r(437)=.96$, $p<.01$). This suggests that simple averaging of factor item scores are an accurate approximation of factor scores.

The 17 remaining items form a scale for measuring authorial identity with three subscales. This is presented in full with the response format and instructions in Figure 24. The results from this test sample showed that the SABAS and three component subscales have high reliability estimates and a stable factor structure. A discussion of these findings is included in the following section.

Figure 24. The SABAS

Student Attitudes and Beliefs about Authorship Scale (SABAS)

Please respond to each question. Mark the box that best reflects your opinions and please remember there are no right or wrong answers.
To what extent do you agree with each of the following statements?

	Statement	**(Strongly agree)**	**(Agree)**	**(Slightly agree)**	**(Slightly disagree)**	**(Disagree)**	**(Strongly disagree)**
1	I have my own style of academic writing.						
2	Being able to write clearly is an important part of being a graduate.						
3	I am able to document my ideas clearly in my writing.						
4	What I write communicates my confidence about the area to the reader.						
5	It is important to me that my essays are well written.						
6	I feel that I am the author of my assignments.						
7	I think of myself as an author.						
8	Academic writing is an important skill.						
9	I generate ideas while I am writing.						
10	I feel that I own my written work.						
11	I have my own voice in my writing.						
12	I feel in control when writing assignments.						
13	I am able to formulate my ideas in my writing.						
14	Academic writing allows me to communicate my ideas.						
15	I consider myself to be the author of my academic work.						
16	My ability to write academically is important to me.						
17	It is important to me to keep developing as an academic writer.						

5.7 Discussion

The current study used scale development techniques to identify a latent variable model of student authorial identity. The model includes three factors: confidence, valuing writing and identification with author. In addition, the findings present a 17 item scale for measuring authorial identity in students. The current discussion discusses the latent variable model in relation to current models of authorial identity, the scale in relation to other measures of authorial identity, and the implication of these findings for an authorial identity approach to student plagiarism.

Models of authorial identity

Although this study used the same operational definition of authorial identity as Pittam et al. (2009), the model of authorial identity identified in the current study is restricted to a smaller number of factors. The Pittam et al. model identified a total of six factors related to authorial identity and further separated this into two categories; three factors labelled 'confidence in writing', 'understanding authorship' and 'knowledge to avoid plagiarism' were conceptualised as key attributes of authorial identity, and three factors were identified as approaches to writing associated with authorial writing: 'top-down', 'bottom-up' and 'pragmatic'. These interpretations were based on factor labels rather than hierarchical analysis of data, but this separation is suitable when inspecting the measures that Pittam et al. used. The model identified in the current study resembles the first group of factors identified in Pittam et al.'s model; this is likely due to the stringent content validity process that discarded items not deemed relevant to authorial identity by SMEs. Ballantine et al. (2013) also suggested a model of authorial identity with three factors using the SAQ measure; however, this included an authorial approaches to writing factor that is absent from the results of the current study. Although approaches to writing are an important consideration for writing instructors (Lavelle, 2007), the findings of this study suggest that they are not understood as a key attribute of authorial identity as a psychological construct.

Two of the authorial identity factors identified by Pittam et al. (2009) map directly onto two of the factors identified in the current study (see Figure 25 for a side by side comparison). 'Confidence in writing' has similarities to 'authorial confidence', and 'understanding authorship' is related to 'identification with author'. However, the factors in the current model include broader elements related to authorial identity. Specifically, the 'authorial confidence' factor in the current study includes items relating to an individual's writing style,

their ability to generate ideas when writing and their communication abilities, whereas the confidence in writing factor identified by Pittam et al. focuses on the process and product of writing. Moreover, Pittam et al.'s understanding authorship factor refers to two items that ask students to self-rate their understanding of authorship. The 'identification with author' factor of the SABAS model does not ask students to rate their own understanding of authorship; instead, items in this subscale ask students how closely they relate to their understandings of author. When compared with Ballantine et al.'s model of authorial identity, the current SABAS model has a number of similarities; firstly, both include a confidence related factor, although the 'lack of confidence factor' in Ballantine et al.'s model is contra-indicative of authorial identity. Secondly, the 'understanding authorship and plagiarism' factor, similarly to Pittam et al.'s 'understanding authorship' factor, links to the SABAS's 'identification with author' factor; however, it also relies on self-ratings of understanding.

The results of the current study converge with the findings from study one; the factors map clearly onto three of the themes from the qualitative findings. 'Confidence' and 'valuing writing' were identified as subthemes of an authorial writer that match the 'authorial confidence' and 'valuing writing' factors; 'negotiation of identities' was an integrative theme from study one that relates to 'identification with author'. These factors match the themes that can be conceptualised as student attitudes and behaviours. Other subthemes from study one that relate to student attitudes and beliefs are 'authorial goals' and 'ownership and attachment'. A number of items related to communication are included in the first factor, but specific references to rhetorical goals are not included in the final scale. This may be due to the majority of students being unaware of the communicative goals of writing, as suggested by academics in study one. A number of items related to ownership are included in the 'identification with author' factor, suggesting that ownership may be closely related to self-identification with author.

Overall, the findings of this study contribute to a framework for understanding authorial identity. Combined with previous research (Pittam et al., 2009; Elander et al., 2010), the findings of study one, and the findings of study three, this study establishes a model of authorial identity in students that is presented in the discussion chapter that concludes the current thesis.

Figure 25. Side by side comparison of Pittam et al.'s (2009) model of authorial identity, Ballantine et al.'s (2013) revised model, the thematic structure from study one and the measurement model developed in study two.

Content removed for copyright reasons. The relevant models of authorial identity are available in the following publications:

Ballantine, J., & Larres, P. M. (2012). Perceptions of Authorial Identity in Academic Writing among Undergraduate Accounting Students: Implications for Unintentional Plagiarism, *Accounting Education: An International Journal*, *21*(3), 289-306.

Pittam, G., Elander, J., Lusher, J., Fox, P., & Payne, N. (2009). Student beliefs and attitudes about authorial identity in academic writing. *Studies in Higher Education*, *34* (2), 153-170.

For information about the comparison of models presented here, please contact the author of the thesis directly.

Measures of authorial identity

The model of authorial identity presented by Pittam et al. (2009) was developed using the Student Authorship Questionnaire (SAQ). In light of the poor psychometric properties of this measure, and continuing reliance on it within authorial identity research (e.g., Ballantine & Larres, 2012; Elander et al., 2010; Maguire et al., 2013), one of the main aims of this study was to develop an alternative measure for use in research and pedagogy. The SABAS fulfils this aim as it has better psychometric properties than the SAQ as shown by statistical analysis of responses from the test sample in this study. Moreover, the rigorous approach to content validity and item reduction gives the SABAS a robust basis compared to the SAQ. In addition, the test sample used in this study is representative of the population under investigation, because it includes students from disciplines other than psychology. However, this does not mean that the 17 item SABAS is the exclusive tool for measuring authorial identity in students.

Clark and Watson (1995) describe development and validation of a psychological measure as an iterative process that goes through multiple rounds of item development and evaluation. The SABAS will contribute to future research on authorial identity, but further research is also expected to improve and influence the SABAS. As a result, the SABAS represents a firm starting point for understanding and measuring the construct of authorial identity in this context; as a measure, it is likely to have limitations that can be investigated in other studies and samples. One issue is the exclusive inclusion of items considered indicative of authorial identity. Mellenbergh (2011) suggests that scales should include equal numbers of indicative and contra-indicative items, but the SABAS does not include any items that indicate low authorial identity. It should be noted that this was not by design, a number of contra-indicative items were included in the original pool of statements, but they were all dropped at varying stages of analysis. This could be due to poor item performance resulting from confusion with negative items; in fact, DeVellis (2012) suggests that this is a reason for avoiding their use. However, the performance of suitable contra-indicative items could be addressed in future research.

The SABAS has been developed to examine authorial identity in students and the test sample is more representative of this population than the sample used by Pittam et al. (2009), but a number of subject areas remain under-represented. This could mean that the model identified in this sample is not robust when used to measure some subject areas, but the SABAS is still

a useful general measure that could inform more specific versions. This is not unusual in the investigation of psychological constructs; for example, quality of life is measured as a general construct in health psychology (Frosch, Kaplan, Ganiats, Groessl, Sieber & Weisman (2004), with disease specific measures developed for more specialised contexts (Bryan, Hurst & Hughes, 2000; McKenna & Hunt, 1994).

As established in study one, there are disciplinary differences relating to understandings of authorial identity and discipline specific measures may be useful for examining these differences. To facilitate future evaluation of the SABAS and development of the measure for other contexts, the full list of 106 items is included as an appendix (Appendix 9). Dropped items may have performed poorly for reasons relating to the specific context of testing; different samples and contexts may yield better performance for some items. For example, a researcher examining authorial identity in one discipline may find it more useful to test the 47 items that were judged as content valid by SMEs. Alternatively, research exploring authorial identity in ESOL students might assess the content validity of all 106 items using ESOL tutors as SMEs for that context. The SABAS's development process and the transparent reporting of this procedure make it suitable for informing these avenues of future research.

As a general measure of authorial identity in students, the SABAS needs further validation by examining other elements of the measure's validity and reliability. A number of these are investigated as part of the validation study reported in the following chapter of the current thesis, such as test-retest reliability, convergent validity with associated constructs and confirmation of the measurement model in a different sample.

Implications for the authorial identity approach to plagiarism

The model of authorial identity presented in this study contributes to current understandings of authorial identity in students. In addition, the SABAS provides a short measurement instrument that is easily administered for further research and evaluation of authorial identity interventions. Developing authorial identity has been targeted as part of plagiarism pedagogy in psychology (Elander et al., 2010), accounting (Ballantine & Larres, 2012) and healthcare (Maguire et al., 2013), and others have examined the construct in students with dyslexia (Kinder & Elander, 2012). Attempts to improve authorial identity have largely focused on explicit instruction and evaluation of these efforts using the SAQ. The SABAS should be used as an alternative or complementary measure in future research of this nature. In addition,

the findings from study one suggest that alternative methods of improving authorial identity could be explored, the SABAS can be employed to evaluate the effectiveness of socialisation and other methods associated with tacit knowledge transfer.

Many implications of the current study are similar to those described by Pittam et al. (2009); the difference being that the SABAS has greater reliability than the SAQ. For example, Pittam et al. suggest that the SAQ's psychometric properties should be assessed with further research. These efforts would be questionable given that the psychometric properties originally reported are poor and a number of factors are measured by two items. The original SAQ model violates a number of considerations outlined in scale development literature (e.g., DeVellis, 2012; Furr, 2011; Mellenbergh, 2011); whereas the SABAS has psychometric properties that are comparatively robust. This warrants further investigation of the SABAS's psychometric properties in relation to other samples. In addition, the SABAS and its subscales should be examined in relation to other measures concerned with plagiarism, academic writing and student learning; a number of these issues are explored in study three.

5.8 Summary

The study presented in the current chapter developed a new measure of authorial identity in the form of the 17 item Student Attitudes and Beliefs about Authorship Scale (SABAS). In addition, a three-factor model of student authorial identity has been presented. This model is an initial replacement for Pittam et al.'s (2009) SAQ model that has a more robust and parsimonious structure. Despite this, there is a need to examine this model in other samples and validate the measurement model in relation to other pedagogic constructs. A validation study dealing with these issues is presented in the following chapter.

Chapter 6

Study 3: Validation of the Student Attitudes and Beliefs about Authorship Scale

6.1 Overview

This chapter presents study three; a scale validation of the Student Attitudes and Beliefs about Authorship Scale (SABAS) presented in the previous chapter. The SABAS was administered to a sample of students alongside other validated measures and the Student Authorship Questionnaire (SAQ). The data was analysed using confirmatory factor analysis (CFA) to assess the construct validity of the model from study two. In addition, reliability was evaluated using a four week retest and predictive validity was analysed using student grade data.

6.2 Introduction

One limitation of current authorial identity research is the lack of an established model developed using a multidisciplinary sample of students. Levels of authorial identity, as indicated by use of first person pronouns, have been shown to differ across disciplines in textual analyses of student writing (Tang & John, 1999; Hyland, 2001b; 2002). This highlights the need to develop a general psychological model of student authorial identity. To support the development of an authorial identity model and further understanding of the construct in students, information about the types of authorial identity prevalent in students is needed. In order to support these research objectives, validation of a reliable and valid measure of authorial identity is necessary.

A valid and reliable scale is crucial for understanding authorial identity and assessing the construct's utility in pedagogic settings. Although studies have already used authorial identity measures to assess interventions to reduce plagiarism (Elander et al., 2010; Maguire et al., 2013), there is a need to replace the currently available measure (the Student Authorship Questionnaire, Pittam et al., 2009) with a scale that is psychometrically robust. This is because the SAQ subscales have reportedly low reliability estimates from development studies (Pittam et al., 2009) and validation studies (Ballantine et al., 2013). In addition, the development by Pittam et al. did not report robust methods of item generation and content validity analysis. Study two used a systematic approach to content validity and item generation that developed a 17-item measure of authorial identity: the Student Attitudes and Beliefs about Authorship Scale (SABAS). The three factor measurement model for this scale was shown to have good psychometric properties compared to the model presented by Pittam et al. (2009) using the SAQ. However, the evaluation of SABAS items reported in study two is based on administration of the entire content valid item pool of 47 items to a single sample.

The 17 items collated as the SABAS have not been evaluated as a measure without the items that were discarded in the scale development process. Following development of a new psychometric scale, it is common practice to validate the measure using a different sample (Kane, 2006). For example, Hunt, Clark-Carter and Sheffield (2011) reported a validation study following development of the Mathematics Anxiety Scale – UK (MAS-UK).

Validation studies provide additional information about a psychological measure's validity and reliability (DeVellis, 2012). Cross-validation of the factor structure with a validation sample provides support for a measure's construct validity. Evidence of construct validity can also come from correlations between the measure and other constructs hypothesised as related to the target of validation. In the case of authorial identity, it has been conceptualised as a psychological construct related to confidence in previous research (Pittam et al., 2009; Ballantine et al., 2013). Furthermore, study one identified that the construct is related to self-efficacy and critical thinking. Validated measures with reported psychometric properties are available for these two constructs, whereas other constructs theorised as related to authorial identity have not been robustly operationalised. For example, a measure of plagiarism attitudes has been psychometrically assessed (Mavrinac, Brumini, Bilic-Zulle & Petrovecki, 2010), but the generation of items for this measure was not conducted systematically.

The Self-Efficacy for Scientific Writing scale (SESW) (Harbke, 2007) is a 26-item self-efficacy measure designed for the specific domain of scientific writing. Items for the SESW were generated from the extensive literature on scientific writing tasks (e.g., Giesbrecht, Sell, Scialfa, Sandals & Ehlers, 1997; Rosnow & Rosnow, 2006; Szuchman, 2005), and tested on a large sample of US undergraduate students (n=1,292), and smaller samples of graduate students (n=124) and academic faculty (n=86). Harbke (2007) identified a robust hierarchical factor structure with six factors and two second order factors, measured by 25 items. Analysis of the data was conducted using exploratory and confirmatory factor analysis to identify six first order factors as 'content', 'style', 'format', 'literature search', 'computation', and 'presentation'. Following development, a sensitivity study conducted by Harbke (2011a) revised the SESW to include 26 items.

The Critical Thinking Toolkit for Psychology (CritTTPsych) (Stupple, Maratos, Elander, Duro, Purewal & Hunt, 2011) is a 36 item instrument designed for measuring critical thinking in psychology students. Items for this measure were generated using qualitative methods and

the item pool was administered to 134 psychology students. This data was analysed using exploratory factor analysis and parallel analysis to identify three underlying latent variables related to critical thinking: 'Confidence in Critical Thinking', 'Valuing Critical Thinking', and 'Avoiding Critical Thinking'. Each of these factors is measured by a number of items that load strongly onto the respective factor alone.

In order to investigate the SABAS's construct validity, a study that administered the SABAS alongside psychometric measures of writing self-efficacy and critical thinking was designed. This allowed the model developed in study two to be tested with a validation sample. Responses to the SAQ were also collected to compare the two authorial identity measures in the same sample. Predictive validity was examined by analysing the relationship between SABAS scores and participant grades. In addition, reliability of the SABAS was examined using estimates of internal consistency and a test-retest design across two time-points.

6.3 Hypotheses

A number of predictions were made on the basis of the SABAS as a reliable and valid measure of authorial identity in students. Meeting these hypotheses would provide supporting evidence for the validity and reliability of the SABAS.

Model fit

The three-factor model from study two was hypothesised to fit the data from the validation sample. In addition, it was predicted that the three-factor model would fit the data better than an alternative uni-dimensional model of authorial identity.

Convergent validity

Although the SAQ measure is not a robust measure, it has served as an indicator of authorial identity in previous research (Elander et al., 2010; Pittam et al., 2009). It was, therefore, predicted that SABAS total scores and SABAS subscale scores would positively correlate with 'confidence in writing', 'understanding authorship', 'knowledge to avoid plagiarism' and 'top-down approach to writing' SAQ subscales, and negatively correlate with 'bottom-up approach to writing' and 'pragmatic approach to writing' SAQ subscales. An alternative model of authorial identity proposed by Ballantine et al. (2013) can also be examined using 12 SAQ items. SABAS total scores and SABAS subscale scores were predicted to positively correlate with two of Ballantine et al.'s subscales: 'understanding authorship and plagiarism'

and ‘authorial approach to writing’; negative correlations were predicted with ‘lack of confidence in writing’, as it is conceptualised as a contra-indicative subscale of authorial identity.

Due to the theorised positive relationship between authorial identity and confidence identified in previous research (Pittam et al., 2009), scores on the SABAS and SABAS subscales were predicted to positively correlate with subscales from the SESW.

Scores on the SABAS and SABAS subscales were predicted to positively correlate with CritTTPsych total scores and the two CritTTPsych subscales indicative of critical thinking, due to authorial identity’s theorised positive relationship with critical thinking identified in study one. In addition, SABAS scores and SABAS subscale scores were predicted to correlate negatively with the contra-indicative CritTTPsych subscale: ‘avoiding critical thinking’.

Test-retest reliability and predictive validity

SABAS scores across two time-points were predicted to positively correlate with themselves and SABAS scores were predicted to positively correlate with student grades.

6.4 Aim and objectives

Aim:

The study presented in this chapter aimed to validate the Student Attitudes and Beliefs about Authorship Scale (SABAS) as a measure of authorial identity in undergraduate student populations.

Objectives:

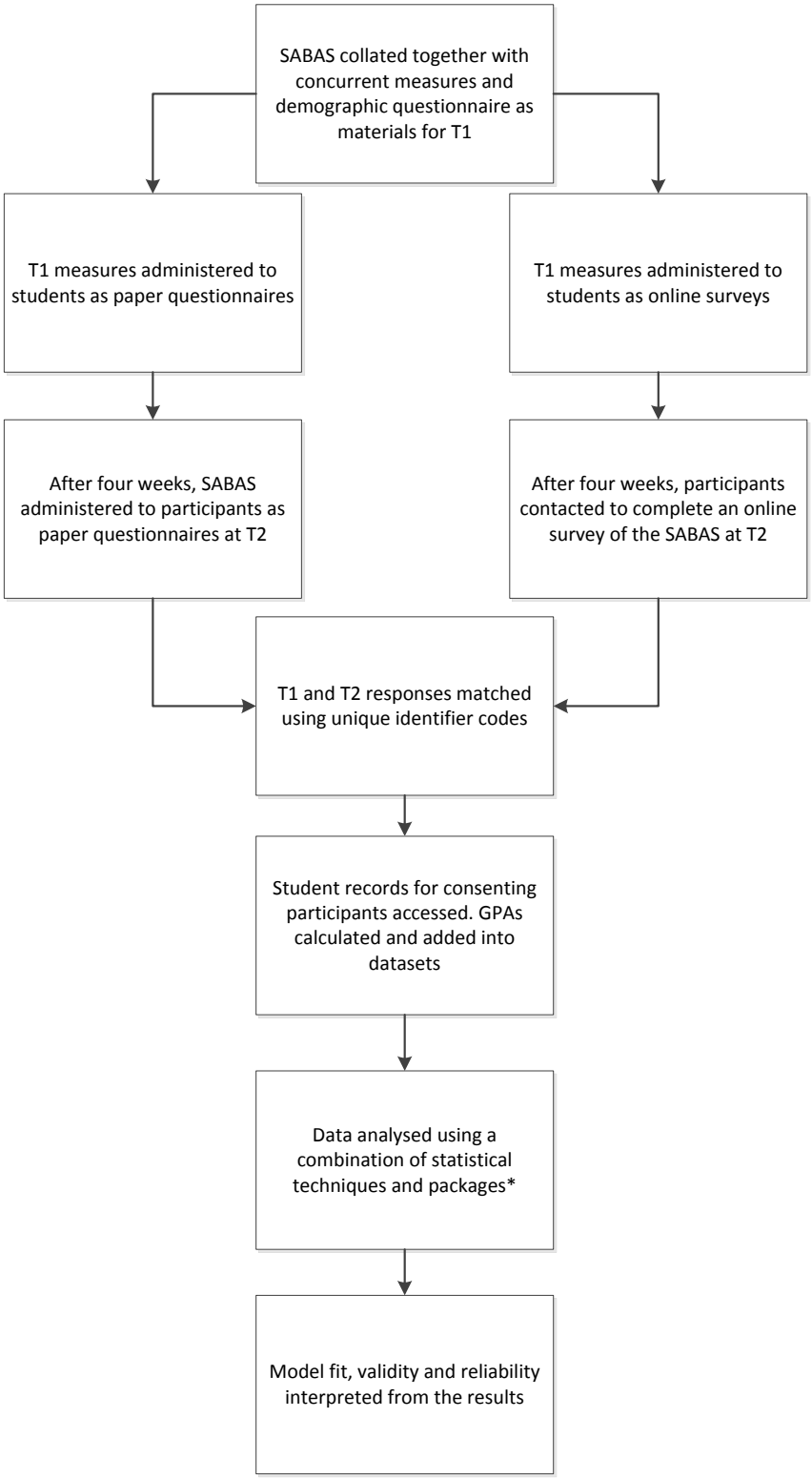
- Test the fit of the SABAS factor model on data from a validation sample.
- Examine the convergent validity of the SABAS with theoretically related constructs.
- Examine the test-retest reliability of the SABAS measure.
- Test the predictive validity of the SABAS measure with student grades.

6.5 Method

6.5.1 Design

Study three used a questionnaire study design and scale validation methods that are well-established in the psychometric literature. The sample recruitment, data collection procedures and analytical techniques used are based on conventions for psychometric validation (Kane, 2006). As a validation study examining different elements of scale validity and reliability, the current research utilised combined aspects of correlational designs with repeated measures testing over two time-points. A flowchart of the study design is presented as Figure 26. Responses were matched between time-point 1 (T1) and time-point 2 (T2) using unique identifier codes provided by participants in case of withdrawal.

Figure 26. Flowchart of the design for study three



*A flowchart of the analytical procedure is included in the analysis section

6.5.2 Measures

At T1, the SABAS was used to collect data for confirmatory analysis. Concurrent measures were also administered to examine convergent validity. In order to examine the hypotheses presented in the introduction, three measures additional to the SABAS were administered. An example set of T1 materials is included as Appendix 12. The psychometric properties and scoring of subscales for all of the measures is detailed in the following section. At T2, the SABAS was administered with briefing and debriefing materials only. A set of T2 material is included as Appendix 13. Table 33 lists all of the materials used to collect data across the two time-points.

Table 33. Materials included as measures at T1 and T2 for the validation study

	Questionnaire sections
Time point 1	Briefing information
	Informed consent form
(Appendix 12)	Demographic questionnaire
	Student Attitudes and Beliefs about Authorship Scale (SABAS)
	Critical Thinking Toolkit for Psychology (CritTTPsych) (Stupple et al., 2011) *
	Self Efficacy in Scientific Writing Scale (SESW) (Harbke, 2007) **
	Student Authorship Questionnaire (SAQ) (Pittam et al., 2009)
	Detachable debrief sheet
Time point 2	Briefing information
	Informed consent form
(Appendix 13)	Student Attitudes and Beliefs about Authorship Scale (SABAS)
	Detachable debrief sheet

*Only included in questionnaire packs for psychology cohorts. Online versions included the question: 'Are you currently enrolled on a psychology course?' Only affirmative responses were presented with the CritTTPsych.
**Only included in questionnaire packs for science cohorts. Online versions included the question: 'Are you currently enrolled on a science course?' Only affirmative responses were presented with the SESW.

Demographic questionnaire

The demographic questionnaire included questions about the participant's gender, mode of study (online/on-campus), status as a mature student, full time/ part time study status, nationality, first language, and stage of study. This data was collected to facilitate further analysis and comparison of findings across participants.

Student Attitudes and Beliefs about Authorship Scale (SABAS)

The SABAS was developed in study two and psychometric properties originally reported for this measure are available in chapter five. Each item is a statement and responses are collected using a six-point Likert scale labelled as 'Strongly disagree', 'Disagree', 'Slightly disagree', 'Slightly agree', 'Agree' and 'Strongly agree'. The items are coded as 1 for

'Strongly disagree' and 6 for 'Strongly agree'. Responses to the SABAS are used to calculate four separate scores: one overall indicator of authorial identity (SABAS score) and scores for each subscale. The SABAS score is the mean score across all 17 items of the SABAS. Each SABAS subscale score is a mean score calculated from subsets of items. The authorial confidence score is the mean of SABAS items 1, 3, 4, 9, 11, 12, 13 and 14. The valuing writing score is calculated as the mean of SABAS items 2, 5, 8, 16 and 17. Finally, the identification with author score refers to the mean of SABAS items 6, 7, 10 and 15.

Concurrent measures

Concurrent measures were selected because of their validation on related samples and the theorised relationship between the measured construct and authorial identity. The reported psychometric properties for each measure are presented to support their use. Apart from the SAQ, which was included as a comparison measure, all of these scales have acceptable psychometric properties that made them suitable for the current study.

Self-Efficacy for Scientific Writing scale (SESW) (Harbke, 2007).

Each item of the SESW refers to a specific task related to scientific writing; the response format for items is a six point Likert scale ranging from 'No Confidence at all' (coded as a score of 1) to 'Complete Confidence' (coded as a score of 6). Responses to the SESW are used to calculate six subscale scores as mean scores across the items for each factor. Harbke (2007) reported Spearman-Brown split-half reliability estimates for the SESW subscales ranging from .80 to .95 for undergraduate samples; these are presented for the six first order factors in Table 34. The full scale is included in Appendix 12 as part of the measures administered at T1. Written permission to use this scale was obtained from the author (Harbke, 2011b) and a copy of this email is included as Appendix 14. The SESW was administered to students in scientific subject areas.

Table 34. Reliability estimates reported for the SESW in undergraduate subsamples by Harbke (2007)

Content removed for copyright reasons. The relevant table is available in the following publication:

Harbke, C. (2007). *Development and evaluation of the "Self Efficacy for Scientific Writing" Scale*. Unpublished doctoral dissertation, Washington State University, Washington, US.

Critical Thinking Toolkit for Psychology (CritTTPsych) (Stupple et al., 2011).

Responders to the CritTTPsych indicate their agreement with each item using a 10-point Likert scale ranging from 'Strongly agree' to 'Strongly disagree'. Responses are used to calculate three subscale scores by summing the scores across all of the items for each factor. An overview of psychometric reliability estimates as reported by Stupple et al. (2011) is given in Table 35. The first two factors are indicative of critical thinking and the last factor is contra-indicative. The full scale is included in Appendix 12 as part of the T1 measures.

Table 35. Reliability estimates for the CritTTPsych subscales by Stupple et al. (2011)

Content removed for copyright reasons. The relevant table is available in the following publication:

Stupple, E., Maratos, F., Elander, J., Duro, E., Purewal, S., & Hunt, T. (2011). *The Critical Thinking Toolkit for Psychology (CritTTPsych): Development of an evidence-based resource.* Higher Education Academy Psychology Network mini-project scheme report.

This measure was administered at T1, but only to psychology students, due to the aim of the CritTTPsych and sample that it was validated with. Permission to use this scale was obtained from the lead author (Dr. Edward Stupple), who is one of the supervisors of the doctoral research presented in the current thesis.

Student Authorship Questionnaire (SAQ) (Pittam et al. 2009).

The SAQ was included as a convergent measure due to its extensive use in authorial identity research. In addition, this allowed the current study to report its performance in comparison to the SABAS measure. The SAQ includes 18 statements with five option Likert scales as the response format. For 17 SAQ items, the Likert scales refer to 'Strongly disagree', 'Disagree',

'Neutral', 'Agree', and 'Strongly agree'. The final item states: "What proportion of your written assignments would consist of quotations or material taken directly from a book, journal or the internet?" and the available responses are '0-20%', '20-40%', '40-60%', and '80-100%'. As the SAQ includes a mixture of items and factors that are indicative or contra-indicative of authorial identity, the scoring instructions presented by Pittam et al. (2009) were used to code items and calculate subscale scores. Permission to use the SAQ was granted by the director of studies (Professor James Elander), who was an author of the study that developed the questionnaire. The SAQ was administered to all participants at T1.

Table 36. Reported internal consistency estimates for Pittam et al.'s (2009) factor model of the SAQ.

Content removed for copyright reasons. The data for the relevant table is available in the following publication:

Pittam, G., Elander, J., Lusher, J., Fox, P., & Payne, N. (2009). Student beliefs and attitudes about authorial identity in academic writing. *Studies in Higher Education, 34* (2), 153-170.

Ballantine et al.'s (2013) alternative authorial identity model with 12 SAQ items

In addition to the original SAQ model developed by Pittam et al. (2009), Ballantine et al. (2013) proposed an alternative model of authorial identity using 12 of the SAQ items to measure three factors: understanding authorship and plagiarism, lack of confidence in writing, and authorial approach to writing. Subscale scores for this model were calculated using the instructions presented in Ballantine et al.'s article. Cronbach's (1951) α estimates of internal consistency reported by Ballantine et al. (2013) are presented in Table 37.

Content removed for copyright reasons. The data for the relevant table is available in the following publication:

Ballantine, J., Guo, X., & Larres, P. (2013). Psychometric evaluation of the Student Authorship Questionnaire: a confirmatory factor analysis approach. *Studies in Higher Education.* Advance online publication. Doi: 10.1080/03075079.2013.835910

Grade data

Grade data was also collected from students who consented to this additional part of the study. These students provided student numbers that allowed the researcher to locate student records at a single institution. The grade point average was calculated using records for the assessment period following participation in the study. These were added to the dataset for further analysis.

6.5.3 Participants

The recruitment procedure for the current study was similar to that followed for study two. This aimed to recruit a representative sample in line with the purposive strategy described in chapter three. Pre-determined inclusion and exclusion criteria were used to assess participants' eligibility for the study; these are listed below.

Inclusion criteria

- Was enrolled on a course at undergraduate level or higher at the time of participating in the study.
- The course was delivered by a publicly-funded higher education institution based in the UK.
- Had submitted and received feedback for at least one undergraduate level summative assessment.

Exclusion Criteria

- Had not completed any summative assessments that included a writing component.
- Was enrolled at a higher education institution based outside of the UK.
- Was enrolled at a UK higher education institution's overseas campus.
- Was enrolled on a doctoral level course at a UK higher education institution.
- Had worked teaching students at undergraduate level for a higher education institution.
- Had taken part in study two of the current thesis.

Recruitment of participants who fulfilled these criteria was facilitated through the use of two strategies designed to recruit a diverse sample representative of the population; this ensured that the sample was not just representative of students at one institution, or students using a particular mode of study (e.g., on-campus or online).

The first strategy identified lecturers for undergraduate and masters level programmes at a single higher education institution and contacted them by email. Consent to recruit student participants from these programmes was sought from tutors, so that the researcher could identify suitable teaching sessions to recruit from. A core module for each stage of study was selected to maximise the number of students approached to participate. This was repeated across a number of programmes and disciplines to achieve a representative multidisciplinary sample.

The second strategy was used to recruit students from other institutions and reach students studying online at UK based institutions. This involved placing an online link to the study on publicly accessible student forums and closed discussion forums used for teaching online courses at one institution. For the online course forums, consent to post links was sought from programme leaders. Throughout the course of recruitment, the links were reposted to relevant forums; in order to maximise heterogeneity in terms of discipline, the sample was monitored and gaps in the sample profile were identified. Disciplines with low participation rates were targeted by posting to subject specific discussion boards and online forums. In addition, the studies were publicised through twitter, by requesting higher education institutions and student unions to re-tweet links to participate. To ensure that participants met the inclusion and exclusion criteria, eligibility criteria were presented and prospective participants were asked to confirm their eligibility before answering the survey items.

These strategies recruited a multidisciplinary sample of 307 students for the study; 206 (67%) paper questionnaire respondents and 101 (33%) online survey respondents. Data screening prior to main analyses identified one extreme outlier who was removed from the analysis. The following participant information excludes the outlier (who completed a paper questionnaire) and refers only to the 306 participants that were included in the main analyses of the study. The mean age for the sample was 23 years (SD=6.6), with a range from 18 years to 58 years. An overview of the sample demographics is included in Table 38. In addition, a breakdown of the subjects studied by participants is included in Table 39. It is worth noting that the largest group of participants in this study were undergraduate psychology students. Although students from other subjects were recruited (notably substantial numbers from biological sciences, forensic sciences, history, and sport studies), the sample was not as balanced as originally intended; however, this sample still represents a more heterogeneous

sample than those used in previous authorial identity studies (e.g., Pittam et al., 2009; Elander, et al., 2010; Maguire et al., 2012; Ballantine & Larres, 2012).

Table 38. Sample demographics for study three participants

	Demographic information N(%)			
Gender	Male 86(28.4)			Female 219(71.6)
Mode of study	Campus 279(91.2)			Online 27(8.8)
Mature student	Non-mature 228(74.5)			Mature 78(25.5)
Full time/ part time	Full time 289(94.4)			Part time 17(5.6)
Nationality	UK 273(89.2)	Non-UK 29(9.5)		Not known 4(1.3)
First language	English 280(91.5)	Non-English 38(8.2)		Not known 1(0.3)
Stage of study	First 51(16.7)	Second 122(39.9)	Third 126(41.2)	Master's 7(2.3)

Table 39. Subjects studied by participants in study three

Subject	**Number of participants**	**Percentage of sample (%)**
Psychology	133	43.5
Biological science	37	12.1
Forensic science	36	11.8
History & cultural studies	29	9.5
Sport studies	27	8.8
Business, marketing & economics	13	4.2
Law & criminology	5	1.6
Politics	4	1.3
Medicine & allied health disciplines	3	1.0
Maths & physics	2	0.7
Music & arts	2	0.7
Engineering and computing	2	0.7
Media studies	2	0.7
Education	1	0.3
Geography	1	0.3
Not known	*9*	*2.9*
Total	**306**	**100**

Note subject percentages do not sum to 100 due to rounding.

6.5.4 Procedure

The procedure for data collection included two strategies: collecting data using paper surveys and collecting data using online surveys. These strategies ran concurrently during the same academic terms. An outline of each strategy is presented in the following section.

Data collection using paper surveys

Suitable taught programmes and core modules were identified using the sampling strategy outlined in section 3.7.1. Module tutors were then consulted to identify two suitable sessions that were four weeks apart. Students were approached to take part in the study at the end of the first session and this was selected as time-point 1 (T1). An explanation of the research was given along with information about the retest that would occur at time-point 2 (T2). Those wishing to take part were given questionnaire packs that included all of the T1 measures. On occasions when the teaching session ended and the room remained available, participants were asked to complete the packs *in situ*. When the room was required for a following session, participants were directed to a suitable location on the same site. Participants were also invited to ask questions about the research. Following the briefing, participants completed the questionnaire packs. The paper surveys included an optional level of consent that was used to collect grade data anonymously. Participating students were informed that they could continue to take part in the study without providing this additional level of consent. Participants who agreed to this level of consent ticked an extra box and entered their student number next to it. All participants were then instructed to insert their unique identifiers and detach the debrief sheets so that they had a record of the researcher's contact details and their unique identifier code for withdrawal. The questionnaire packs were then collected by the researcher.

At T2 this procedure was repeated to collect data using T2 measures. Participants were explicitly told that their participation in the study ended at T2, so withdrawal of all study data was possible up to four weeks after T2, not T1. In addition, the oral debrief included information about the writenow student authorship project, that was omitted from the oral debrief at T1.

The researcher identified T1 responses where participants had agreed to the additional level of consent. Student numbers were used to identify their student records and calculate their grade point average. This was entered as a variable into the dataset along with the rest of the

data. The student number was not entered digitally, the only record of this identifying information remained on the consent form, which was stored securely and separate from the rest of the data.

Data collection using online surveys

Online versions of all measures were developed using Surveymonkey. Recruitment was conducted using the strategy outlined previously. The posting of information and recruitment for online participants began on the same day that the paper version of T1 measures was administered to on-campus students for the first time. In addition, the online version of T1 measures included an explanation of the retest procedure and a non-compulsory space to enter an email address to be contacted with a link at T2. It was explained that the email address would only be used for this purpose and that participants could take part in the research without taking part in the retest portion of the study. Entrance of an email address to this section was taken as consent to be emailed at T2, and it was clarified that the email address would be deleted after this point. The online version of T1 remained active until the end of the semester.

Each consenting participant was emailed after four weeks of completing T1 with a reminder about the research and a link to the online version of T2 measures. A further email was sent out after three days that thanked the participant for taking part. This was sent without checking responses to T2 measures and served as a reminder to complete the retest. Following this reminder, the respective email address was deleted from the database to preserve confidentiality and anonymity. The online version of T2 measures remained active until five weeks after the end of that semester.

6.5.5 Analysis

The current study used a number of statistical techniques to analyse and evaluate the scale responses collected. An overview of these procedures and their use in the current study are outlined in this section; for a more detailed description of these methods, please refer to chapter 3. A flowchart of these procedures is presented in Figure 27.

Figure 27. Flowchart of the analyses used in study three to validate the SABAS

Mardia's coefficient and Mahlanobis distance

These statistics were calculated for data screening before conducting confirmatory factor analysis (CFA). Mardia's coefficient is a measure of multivariate kurtosis and Mahalanobis distance is used to identify multivariate outliers (Tabachnick & Fidell, 2007). These were important to consider, because CFA is sensitive to violations of multivariate normality.

Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis was used to examine the construct validity of the SABAS model of authorial identity, and a one factor model that hypothesised a single latent variable. This statistical technique is commonly used in scale validation studies to assess the reliability of pre-defined models of measurement (e.g., Hunt et al., 2011). R (R Core Team, 2013) was used in conjunction with the sem package to conduct these analyses (Fox, Nie & Byrnes, 2013).

Bootstrapping

Bootstrapping was employed as part of the CFA to account for violations of multivariate normality identified during bootstrapping. The procedure used 2,000 iterations to calculate revised model fit statistics; this is in line with similar uses of bootstrapping in scale validation research (e.g., Hunt et al., 2011).

Internal reliability estimation

Internal reliability and consistency was investigated by calculating Cronbach's (1951) α and alternative internal consistency estimates recommended by Zinbarg et al. (2005). Cronbach's α was used to assess the reliability of the SABAS, and other measures such as the SAQ. In addition, Cronbach's α was used to assess temporal stability as recommended by Nunnally and Bernstein (1994). Alternative reliability estimates were calculated using the psych package (Revelle, 2013) in R (R Core Team, 2013).

Correlations

Correlations were used to examine the relationships between SABAS scores and convergent validity measures that were administered concurrently. SABAS scores and SABAS subscale scores were also correlated across two separate administrations of the measure to assess temporal stability. All correlations reported in the current study were parametric Pearson's

correlations as they used subscale scores identified as normally distributed during data screening.

Parallel Analysis

Cho et al.'s (2009) parallel analysis (PA) using polychorric correlations was used to confirm the number of latent variables underlying the validation dataset. This procedure ensured that the latent variable model used was correct in terms of dimensionality, thus providing support for the model's construct validity.

One-way ANOVA

ANOVAs were used to examine stage of study effects on SABAS scores and SABAS subscale scores across three stages of undergraduate study. These were interpreted in conjunction with Levene's tests of homogeneity and post-hoc tests, as recommended for psychological research (Field, 2013).

Jonckheere's trend test

Jonckheere's trend tests were used to examine trends in SABAS scores and SABAS subscale scores across stages of study. These trends were initially identified by inspecting means plots for these variables. Although parametric linear contrast tests were also considered for these analyses, Jonckheere's tests were used due to breaches of homoscedasticity and established use of Jonckheere's tests in pedagogic psychology research (e.g., Norton, 1990).

6.6 Results

6.6.1 Data Preparation and Screening

Scores for all measures were entered into SPSS according to scale scoring instructions, and instances of unexpected missing data were identified. The missing values appeared to be random questions missed in the paper questionnaires. Missing values analysis was conducted to check for patterns of missing data. None of the Student Attitudes and Beliefs about Authorship Scale (SABAS) items had greater than 1% of data missing and none of the Student Authorship Questionnaire (SAQ) items had more than 3% missing. In addition, all cases had less than 5% of data missing, which is regarded as a small amount of missing data (Graham, 2009). Therefore inferential testing was not necessary to explore the missing values further. Tabachnick and Fidell (2007) suggest that multiple imputation is suitable for dealing with random missing data that comprises less than 5% of a dataset. Therefore, multiple

imputation was used to replace missing values in the SABAS and SAQ scores; this was not possible for other measures because missing data reflected the different questionnaire packs completed by disciplinary subsamples. SABAS scores were constrained to whole integers with a minimum value of one and a maximum value of six. SAQ scores were constrained to whole integers with a minimum of one and a maximum of five. These constraints match those of the Likert scales used to collect data. Scoring instructions were used to calculate subscale scores for the SESW (Harbke, 2007), the CritTTPsych (Stupple et al., 2011), and the SAQ (Pittam et al., 2009). In addition, subscales were calculated for Ballantine et al.'s (2013) model of the SAQ using the 12 item three-factor model presented in the findings of their study. Standardised scores for the three subscales of the SABAS were computed using the procedures developed in study two. Descriptive statistics were calculated for SABAS total scores and SABAS subscale scores, which indicated that these scores were normally distributed (Table 40).

Table 40. Descriptive statistics for SABAS scores from study three

	Mean	SD	Skewness	Kurtosis	Range
Authorial confidence	4.63	.58	-.52	1.07	1.50 to 6.00
Valuing writing	5.42	.55	-1.47	3.92	2.20 to 6.00
Identification with author	4.45	.85	-.40	.04	2.13 to 6.00
SABAS total score	4.82	.49	-.31	.37	2.94 to 6.00

The dataset was assessed for univariate normality using descriptive statistics of individual SABAS item scores (Table 41); this suggested that a number of SABAS item variables were significantly kurtosed. Fit-indices from Confirmatory Factor Analysis (CFA) have been shown to be sensitive to multivariate non-normality (Tabachnick & Fidell, 2007); as CFA was intended for use with the SABAS items, a Mardia's coefficient for multivariate kurtosis was calculated for the SABAS items, which revealed high non-normality in this portion of the dataset (Mardia's coefficient = 99.85, critical ratio = 34.36). This informed further decisions to employ bootstrapping procedures as part of the CFA.

Table 41. Descriptive statistics for individual SABAS item scores from study three

SABAS item	Mean	SD	Skewness	Kurtosis	Range
SABAS01	4.57	.88	-.99	1.75	1 to 6
SABAS02	5.60	.60	-1.68	4.36	2 to 6
SABAS03	4.53	.92	-.98	1.73	1 to 6
SABAS04	4.64	.86	-.96	2.16	1 to 6
SABAS05	5.57	.59	-1.22	1.45	3 to 6
SABAS06	5.06	.94	-.92	.56	2 to 6
SABAS07	3.27	1.34	.18	-.76	1 to 6
SABAS08	5.48	.73	-2.00	6.87	1 to 6
SABAS09	5.07	.85	-1.30	3.14	1 to 6
SABAS10	4.90	.99	-1.01	1.13	1 to 6
SABAS11	4.68	.97	-.74	.76	1 to 6
SABAS12	4.45	.94	-.55	.45	1 to 6
SABAS13	4.64	.83	-1.05	2.83	1 to 6
SABAS14	4.50	.88	-.62	.51	2 to 6
SABAS15	4.56	1.07	-.80	.69	1 to 6
SABAS16	5.23	.85	-1.53	4.09	1 to 6
SABAS17	5.23	.94	-1.51	2.93	1 to 6

Mahalanobis distances were calculated to identify multivariate outliers when considering the SABAS scores; one participant was identified as an extreme outlier (Mahalanobis d-squared = 120.03). On inspection of the data, it was found that this participant had responded at extreme ends of Likert scales for all items in the questionnaires using an arbitrary pattern (i.e., a page of maximum responses followed by a page of minimum responses). This participant was removed from the data and the Mardia's coefficient was recalculated (Mardia's coefficient=99.85, critical ratio=34.36); however, this suggested that removal of the outlier did not change the level of multivariate kurtosis in the dataset, and the data was still multivariate non-normal. Mahalanobis distances were calculated for the remaining 306 participants. These were interpreted using a cut-off derived from the critical value of the χ^2 distribution with degrees of freedom matching the number of variables in the dataset. Tabachnick and Fidell (2007) suggest that participants with a Mahalanobis distance greater than this value at the .001 level can be identified as multivariate outliers; this was set as 40.79 (df=17, p=.001). Using an iterative process of removing outliers and recalculating Mahalanobis distances, 30 additional multivariate outliers were identified (31 including the extreme case). Inspection of demographic data did not suggest rationales for their removal, (i.e., they were not homogeneous with regards to subject, stage of study, or non-traditional student group). Examination of descriptive statistics also indicated that univariate distributions were normally distributed when analysed independently of the rest of the

sample. Because they represented a significant portion of the sample (9.8%), they were hypothesised as valid contributors to the sample distribution and included in further analysis. Therefore the dataset for further analysis included 306 responses to the 17 item SABAS, with missing data imputed and an identified non-normal distribution.

6.6.2 Reliability Estimates for the SABAS

Cronbach's α (1951) was calculated as an estimate of the internal consistency of the SABAS and corrected item-total correlations for each item were computed to examine whether the items measured a single construct. These are presented alongside Cronbach's α if item deleted for each SABAS item (Table 42). This analysis indicated that internal consistency could not be increased by removing SABAS items; however, some of the corrected item-total correlations were not as strong as expected.

Table 42. Corrected item-total correlation coefficients and Cronbach's α if the item was deleted for the SABAS items.

Item no.	Item content	Corrected item-total correlation coefficient	Cronbach's α if item deleted
01	I have my own style of academic writing.	.33	.85
02	Being able to write clearly is an important part of being a graduate.	.36	.85
03	I am able to document my ideas clearly in my writing.	.48	.84
04	What I write communicates my confidence about the area to the reader.	.46	.84
05	It is important to me that my essays are well written.	.40	.85
06	I feel that I am the author of my assignments.	.54	.84
07	I think of myself as an author.	.57	.84
08	Academic writing is an important skill.	.32	.85
09	I generate ideas while I am writing.	.43	.84
10	I feel that I own my written work.	.52	.84
11	I have my own voice in my writing.	.48	.84
12	I feel in control when writing assignments.	.58	.84
13	I am able to formulate my ideas in my writing.	.60	.84
14	Academic writing allows me to communicate my ideas.	.50	.84
15	I consider myself to be the author of my academic work.	.57	.84
16	My ability to write academically is important to me.	.41	.85
17	It is important to me to keep developing as an academic writer.	.30	.85

Cronbach's α was also calculated for each SABAS subscale. These were all above .70 which is the minimum α recommended for a reliable psychometric measure (DeVellis, 2012); they are presented in Table 43 alongside alternative estimates of internal reliability.

Table 43. Reliability estimates for SABAS and subscales from study three

Measure	Cronbach's α	Revelle's β	McDonald's ω_h	Mcdonald's ω_t	Bentler & Woodward's *glb*	Guttman's λ_4
SABAS (n=17)	.85	.47	.56	.89	.92	.90
Subscale (n of items)						
Authorial confidence (n=8)	.81	.73	.66	.85	.85	.82
Valuing writing (n=5)	.79	.77	.71	.88	.86	.83
Identification with author (n=4)	.79	.70	.80	.85	.80	.80

The alternative estimates of internal consistency allow better evaluation of the SABAS's reliability than would be achieved by assessing Cronbach's (1951) α alone. Although most of these additional estimates are acceptably high, the low Revelle's (1979) β (β=.47) and McDonald's (1999) ω_h (ω_h=.56) indicate some issues with the SABAS's internal consistency. In particular, a measure with a high α and low β is indicative of a "lumpy" construct (Revelle, 1979, p. 60). This concept of lumpiness describes a construct that has several large factors that underlie the measurement model. Whilst this is not problematic for a multidimensional model of authorial identity, it does raise the question of why this finding appears in the current validation study, even though Revelle's β for the SABAS scale suggested a high level of uni-dimensionality in study two (β=.70). In fact, the ω_h reported in study two was also acceptably high (ω_h=.70) compared to the current validation study findings. As ω_h is an index of the proportion of scale variance attributable to a general factor (Zinbarg et al., 2005), these estimates suggest that the scale's measurement of a general authorial identity factor should be further investigated. This is also evident in the lower than expected corrected item-total correlations. Further studies should attempt to replicate these findings and establish whether the SABAS measures a general underlying latent variable.

6.6.3 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was used to examine two hypothesised models of authorial identity in students. These were a one dimensional model with all of the items caused by a single latent variable and the three dimensional model identified in the EFA reported in study two; both were developed *a priori* based on understandings of authorial identity. Alternative models based on factor structures from SAQ studies were also considered for testing (e.g., Pittam et al., 2009; Ballantine et al. 2013), but the SABAS items could not be matched to these models based on face validity.

CFA using maximum likelihood estimation calculated large exact fit χ^2 statistics for both models (see Table 44); these were significant at the .001 level. This was expected for the dataset, because CFA chi-square is sensitive to non-normality (West, Finch & Curran, 1995) and large sample sizes (Tabachnick & Fidell, 2007). Therefore, other fit indices are reported alongside the chi-square below; this is the minimum set described by Kline (2005) and recommended by Schweizer (2010). Other commonly used fit-indices were in line with findings of this set so they have not been reported.

Table 44. Fit indices for confirmatory models

	χ^2(df)	Normed χ^2	RMSEA (90% Confidence Interval)	CFI	SRMR
One factor model	785.03(119)	6.60	.14 (.13 – .15)	.60	.11
Three factor model	332.06(116)	2.86	.08 (.07 – .09)	.87	.07

Schweizer (2010) outlines a number of guidelines for identifying good and acceptable fit based on conventions in the psychometric literature. Bollen (1989) suggests that a normed χ^2 below two indicates good fit and below three acceptable fit. Root mean square error of approximation (RMSEA) (Steiger & Lind, 1980) values below .05 are interpreted as good fit and less than .08 suggest an acceptable fit (Browne & Cudeck, 1993). A comparative fit index (CFI) (Bentler, 1990) in the range of .95 to 1.00 is considered good fit and .90 to .95 acceptable fit (Bentler, 1990; Hu & Bentler, 1999). Also, standardized root mean square residual (SRMR) values should be below .10 (Kline, 2005) with values below .08 suggesting good fit (Hu & Bentler, 1999). All of these indices indicate that the one-factor model fitted poorly to the data, whereas the normed χ^2 and RMSEA suggest that the three-factor model is an acceptable fit. In addition, the SRMR value for the three-factor model suggests that the model is a good fit; however, the CFI is just outside of the recommended range for acceptable fit, suggesting that model fit could be improved.

Comparison of these fit indices shows that the three-factor model fits the data better than a uni-dimensional model. Moreover, the analysis suggests that the three-factor model represents adequate to good fit for the validation dataset. As identified during data-screening, multivariate non-normality in the dataset was high, so a bootstrap using 2000 samples was employed. The three-factor model was used for further evaluation by employing a bootstrap

with 2000 iterations to account for non-normality in the data. A detailed overview of the confirmatory analysis and bootstrapped model for the three-factor solution is presented in the following section.

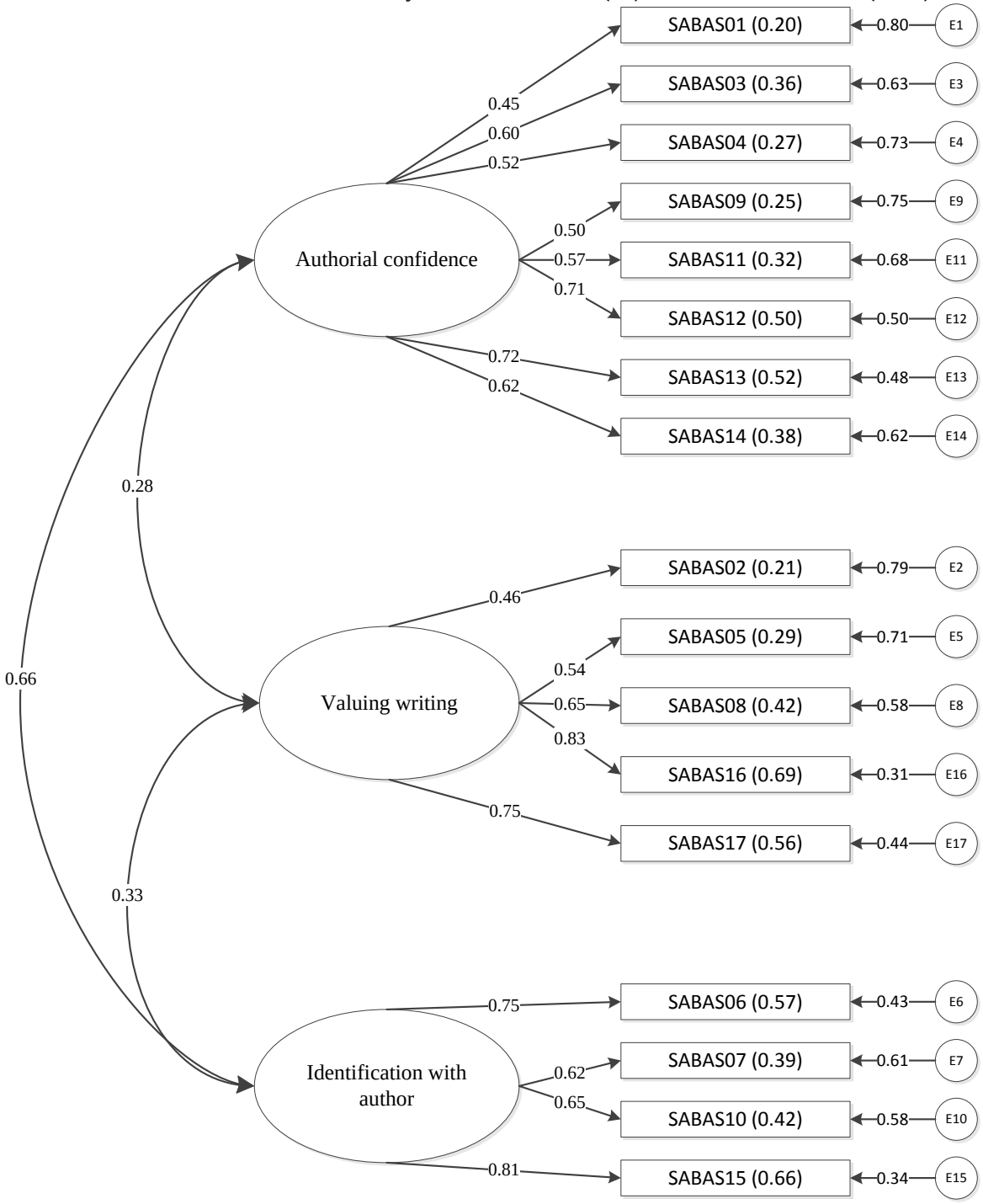
Details of the three factor confirmatory analysis

Standardised path coefficients for items and factors ranged between .45 (SABAS 01) to .83 (SABAS 17) with a mean of .63; these are presented in the path diagram below (Figure 28). Bootstrapped standard errors and estimated path coefficients were identical to those in the original model up to two decimal places. Bias corrected and non-bias corrected confidence intervals around the regression weights for estimated paths were also calculated at the 90% level (Table 45); these indicated that confidence intervals would have to be set at the 99.9% level before the lower bound would be zero, thus presenting evidence for an adequately fitting model.

Table 45. Standardised regression weights for estimated path coefficients and 90% confidence intervals.

Factor Item	Factor label Item content	Estimated path	Bias-corrected 90% CI	Un-corrected 90% CI	Variance accounted for by latent variable (R^2)	Estimate of error for item ($1- R^2$)
Factor 1	**Authorial Confidence**					
Item 1	I have my own style of academic writing.	.45	.32 - .57	.31 - .57	.20	.80
Item 3	I am able to document my ideas clearly in my writing.	.60	.45 - .72	.45 - .73	.36	.63
Item 4	What I write communicates my confidence about the area to the reader.	.52	.37 - .63	.38 - .63	.27	.73
Item 9	I generate ideas while I am writing.	.50	.41 - .58	.41 - .58	.25	.75
Item 11	I have my own voice in my writing.	.57	.46 - .66	.46 - .67	.32	.68
Item 12	I feel in control when writing assignments.	.71	.62 - .78	.62 - .79	.50	.50
Item 13	I am able to formulate my ideas in my writing.	.72	.61 - .81	.61 - .81	.52	.48
Item 14	Academic writing allows me to communicate my ideas.	.62	.51 - .71	.51 - .71	.38	.62
Factor 2	**Valuing Writing**					
Item 2	Being able to write clearly is an important part of being a graduate.	.46	.31 - .60	.32 - .60	.21	.79
Item 5	It is important to me that my essays are well written.	.54	.41 - .66	.41 - .66	.29	.71
Item 8	Academic writing is an important skill.	.65	.52 - .75	.52 - .75	.42	.58
Item 16	My ability to write academically is important to me.	.83	.73 - .91	.73 - .91	.69	.31
Item 17	It is important to me to keep developing as an academic writer.	.75	.66 - .83	.65 - .83	.56	.44
Factor 3	**Identification with Author**					
Item 6	I feel that I am the author of my assignments.	.75	.67 - .82	.68 - .83	.57	.43
Item 7	I identify with the role of author when writing my assignments.	.62	.53 - .70	.54 - .70	.39	.61
Item 10	I feel that I own my written work.	.65	.54 - .74	.54 - .74	.42	.58
Item 15	I consider myself to be the author of my academic work.	.81	.74 - .88	.74 - .88	.66	.34

Figure 28. Path diagram of the three-factor confirmatory model, showing standardised path coefficients (R), estimates of the variance accounted for by the latent variable (R^2), and estimates of error (1- R^2)



Although the model showed acceptable fit, modification indices were examined for suggested re-specifications of the model (see Table 46.). This was done cautiously, as modification indices should not be used to change models without good theoretical reasons for doing so (Hooper et al., 2008).

Table 46. Suggested parameter modifications for 10 highest modification indices

Suggested parameter for modification	Modification Index
Corr(SABAS 3 error, SABAS 4 error)	38.82
Corr(SABAS 2 error, SABAS 16 error)	21.42
Corr(SABAS 2 error, SABAS 8 error)	17.84
Corr(SABAS 11 error, SABAS 10 error)	16.52
Corr(SABAS 4 error, SABAS 7 error)	11.78
Corr(SABAS 9 error, SABAS 10 error)	11.07
Corr(SABAS 2 error, SABAS 5 error)	9.89
Corr(SABAS 4 error, SABAS 5 error)	8.70
Corr(SABAS 4 error, SABAS 13 error)	8.08
Corr(SABAS 5 error, SABAS 6 error)	7.98

Each modification index is an estimate of the chi-square value decrease that would result from re-specifying the model parameter (Kline, 2005). The 10 modifications with greatest estimated chi-square reductions were all correlations between items. The first three suggestions are correlations between the errors of items in the same factors. Although these modifications are defensible, as they do not violate the internal consistency of factors, there was not a strong rationale for making the changes based on theory; therefore, the model was not re-specified to avoid exploratory use of the confirmatory analysis (DeVellis, 2012). However, these modification indices suggest that the specified model is robust, because there are no major changes to the model (i.e., cross subscale changes) that would result in a large reduction of the chi-square value.

In addition to inspecting fit-indices and modification indices, other approaches are recommended for examining model fit, such as reporting the residual covariance matrix (Jackson et al., 2009). The matrix of standardised residual covariances is available in Table 47. This shows the residual covariances between items that the specified model does not account for. Inspection of this matrix can be used to identify localised sources of model misfit that indicate a poorly performing item. There were a number of high residual covariances (up to 3.75) in this matrix, but they were not concentrated as problems associated with particular items. This inspection did not suggest that removal of a specific item would improve model fit.

Overall, the results of the CFA suggest that the three-factor model of the SABAS displays adequate fit when assessed in relation to the validation dataset. This provides supporting evidence for the construct validity and reliability of the SABAS measurement model.

Table 47. Standardised residual covariances not accounted for by the specified model.

	SABAS 01	SABAS 02	SABAS 03	SABAS 04	SABAS 05	SABAS 06	SABAS 07	SABAS 08	SABAS 09	SABAS 10	SABAS 11	SABAS 12	SABAS 13	SABAS 14	SABAS 15	SABAS 16	SABAS 17
SABAS 01	.00	.05	.68	-1.08	.44	.68	.80	-1.76	.86	-.81	.51	-1.03	.94	-.62	-.17	-2.18	-2.13
SABAS 02		.00	2.52	3.24	2.16	.98	1.31	2.53	1.70	1.08	-.15	.66	3.10	1.10	.80	-1.67	-.24
SABAS 03			.00	3.80	2.32	-.72	.23	-.20	-.04	-.63	-1.42	-.84	-.02	.64	-2.02	-.65	-1.20
SABAS 04				.00	3.76	-.88	2.42	1.10	.17	-.98	-1.43	-.16	-1.41	.88	-1.31	1.17	-.73
SABAS 05					.00	1.93	1.38	-.50	-.21	.72	.64	1.95	1.94	.95	.27	.22	-1.08
SABAS 06						.00	-.42	-1.49	.01	-.22	.09	.62	-.13	-1.67	.47	-.73	-1.60
SABAS 07							.00	1.31	1.41	-.50	2.46	1.15	.57	-.08	-.18	1.84	.42
SABAS 08								.00	-.41	-.57	-.75	-.03	.23	.92	-1.11	-.19	-.15
SABAS 09									.00	2.52	1.63	-1.18	-.34	.02	-.93	-.31	-1.06
SABAS 10										.00	3.32	1.45	.17	-.38	.04	.10	-.58
SABAS 11											.00	.09	-.11	-.03	.26	-1.16	-1.76
SABAS 12												.00	.66	.53	-.10	-.75	-.91
SABAS 13													.00	-.48	.35	-.44	.16
SABAS 14														.00	-1.20	1.35	.70
SABAS 15															.00	.62	-.96
SABAS 16																.00	.51
SABAS 17																	.00

6.6.4 Parallel Analysis to Check the Number of Factors

Although parallel analysis (PA) is typically used in conjunction with exploratory factor analysis (EFA) to identify the number of factors to extract, it was considered appropriate to use this technique for confirming the expected number of latent variables. PA using polychorric correlations (Cho et al., 2009) with 100 iterations suggested that three components had Eigenvalues greater than the 95th percentile Eigenvalues from simulated datasets. Table 48 shows the Eigenvalues of the first four empirical components and the 95th percentile simulated components.

Table 48. Eigenvalues for components extracted from the validation dataset and 95th percentile Eigenvalues for components extracted over 100 iterations of simulated data

	Eigenvalues	
Component	Polychoric PCA of the dataset	Polychoric PCA of random simulated data.
1	6.08	1.54
2	2.51	1.41
3	1.48	1.35
4	.94*	1.29

*Eigenvalue for component extracted from the empirical dataset lower than the Eigenvalue extracted from the simulated dataset.

Parallel analysis confirmed that a model with three latent variables was suitable for the dataset. This finding supports the overall construct validity of the SABAS model and subscales as it suggests that a three-factor model is the most parsimonious model of the data available, and that a more complicated factor model would be trying to account for noise covariance caused by errors.

6.6.5 Convergent validity

Authorial identity as measured by the SABAS was theorised to have statistically significant relationships to a variety of concurrently administered measures. Previous authorial identity studies (Ballantine et al., 2013; Elander et al., 2010; Maguire et al., 2013; Pittam et al., 2009), and studies one and two of the current thesis, suggest that authorial identity is related to self-efficacy and critical thinking. To assess the construct validity of the SABAS model, the results of correlations aiming to identify these relationships are presented below in Table 49.

Table 49. Correlations between SABAS scores and measures administered concurrently

Concurrent measure N=Number of participants	Subscale	SABAS total	SABAS Factors		
			Authorial confidence	Valuing writing	Identification with author
Self-efficacy in scientific writing (SESW) (Harbke, 2007) N=216	**Scientific content**	.30*	.31*	.06	.24*
	Scientific style	.28*	.30*	.04	.23*
	Scientific formatting	.86*	.39*	.24*	.56*
	Literature search	.23*	.29*	-.01	.16*
	Data computation	.36*	.45*	.04	.24*
	Data presentation	.33*	.29*	.18*	.27*
Critical Thinking Toolkit for Psychology (CritTTPsych) (Stupple et al., 2011) N=131	**Confidence in critical thinking**	.59*	.53*	.36*	.44*
	Valuing critical thinking	.29*	.10	.45*	.22*
	Avoiding critical thinking	-.10	-.08	.00	-.13
	CritTTPsych Total	.53*	.42*	.42*	.39*
Student Authorship Questionnaire (SAQ) (Pittam et al., 2009) N=306	**Confidence in writing**	.58*	.63*	.20*	.39*
	Understanding authorship	.31*	.24*	.14*	.32*
	Knowledge to avoid plagiarism	.30*	.27*	.15*	.24*
	Top-down approach to writing	.22*	.21*	.08	.18*
	Bottom-up approach to writing	-.01	.00	-.02	-.02
	Pragmatic approach to writing	-.24*	-.16*	-.25*	-.18*
Alternative SAQ subscales (Ballantine et al., 2013) N=306	**Understanding authorship & plagiarism**	.39*	.33*	.18*	.36*
	Lack of confidence in writing	-.19*	-.32*	.13**	-.13**
	Authorial approach to writing	.26*	.30*	.05	.19*

*Correlation is significant at the .01 level.
**Correlation is significant at the .05 level.

Self-efficacy in writing *measured using Harbke's (2007) Self-Efficacy in Scientific Writing Scale (SESW)*

A subsample of 216 participants studying science disciplines was used to investigate correlations between SABAS scores and SESW (Harbke, 2007) scores. Significant positive relationships were identified between SABAS total scores and all five of the SESW subscales. These were moderately weak to strong ($r(214)=.23$ to .86, $p<.01$ for all tests). In relation to subscale scores, slightly stronger positive correlations were identified in authorial confidence scores ($r(214)=.29$ to .45, $p<.01$ for all tests), and slightly weaker positive correlations with identification with author scores ($r(214)=.16$ to .56, $p<.01$ for all tests). Valuing writing scores had weak positive, but significant, relationships with the data presentation subscale of the SESW ($r(214)=.18$, $p<.01$) and the scientific formatting subscale of the SESW ($r(214)=.24$, $p<.01$); however valuing writing did not significantly correlate with the other SESW subscales ($p>.05$). Overall, these findings suggest that the construct measured by the SABAS is positively related to self-efficacy in scientific writing as measured by the SESW; these results support the overall construct validity of the SABAS measurement model.

Critical thinking *measured using Stupple et al.'s (2011) Critical Thinking Toolkit for Psychology (CritTTPsych)*

A subsample of 131 psychology students was used to investigate correlations between SABAS scores and CritTTPsych scores. Moderately weak positive significant relationships were identified between CritTTPsych total scores and all of the SABAS subscales ($r(129)=.39$ to .42, $p<.01$ for all tests). In addition, there was a moderate positive relationship between SABAS total scores and CritTTPsych total scores ($r(129)=.53$, $p<.01$). SABAS total scores also positively correlated with the two CritTTPsych subscales indicative of critical thinking; these were moderately weak for valuing critical thinking ($r(129)=.29$, $p<.01$) and moderately strong with confidence in critical thinking ($r(129)=.59$, $p<.01$). However, the hypothesised negative correlation between SABAS total scores and the avoiding critical thinking CritTTPsych subscale was not significant ($r(129)=-.10$, $p>.05$). In fact, the avoiding critical thinking subscale did not significantly correlate with any of the SABAS subscales ($r(129)=.00$ to $-.13$, $p>.05$ for all tests), although correlation coefficients were in the hypothesised direction.

The confidence in critical thinking subscale of the CritTTPsych positively correlated with all of the SABAS subscales; these varied from moderately weak to moderate in strength ($r(129)=.36$ to .53, $p<.01$ for all tests). The valuing critical thinking CritTTPsych subscale positively correlated with the SABAS total score ($r(129)=.53$, $p<.01$), and two of the SABAS subscales: valuing writing ($r(129)=.45$, $p<.01$) and identification with author ($r(129)=.22$, $p<.01$); however, it was not significantly correlated with authorial confidence ($r(129)=.10$, $p>.05$).

Overall, these findings indicate that the construct measured by the SABAS is positively related to critical thinking as measured by the CritTTPsych. However, the SABAS did not significantly correlate with the avoiding critical thinking subscale of the CritTTPsych; possible reasons for this finding are discussed in the concluding sections of the current chapter.

Authorial identity as measured using Pittam et al.'s (2009) Student Authorship Questionnaire (SAQ)

Convergent validity was examined by correlating SAQ subscales with SABAS subscales and SABAS total scores. There were significant positive relationships between SABAS total scores and SAQ subscales indicative of authorial identity (Pittam et al., 2009); these ranged from weak to moderate in strength ($r(304)=.22$ to .58, $p<.01$). As predicted, the authorial confidence SABAS subscale had a positive relationship with the confidence in writing SAQ subscale; the correlation between these subscales was moderately strong ($r(304)=.63$, $p<.01$). The authorial confidence SABAS subscale also correlated with the other indicative subscales of the SAQ in the hypothesised direction; these relationships were weak, but significant ($r(304)=.21$ to .27, $p<.01$). The identification with author SABAS subscale also correlated significantly with SAQ subscales indicative of authorial identity; these ranged from weak to moderately weak ($r=.18$ to .39, $p<.01$ for all tests). There were significant positive correlations between the valuing writing SABAS subscale and three of the indicative SAQ subscales: confidence in writing ($r(304)=.20$, $p<.01$), understanding authorship ($r(304)=.14$, $p<.01$), and knowledge to avoid plagiarism ($r(304)=.15$, $p<.01$). However, valuing writing did not significantly correlate with the SAQ's top-down approach to writing ($r(304)=.08$, $p>.05$).

The contra-indicative subscales were hypothesised to negatively correlate with the SABAS subscales. This was the case for pragmatic approach to writing, which was negatively

correlated with the SABAS total score and all of the SABAS subscales; these correlations were weak in strength, but significant ($r(304)=-.16$ to $-.25$, $p<.05$ for all tests). The bottom-up approach to writing did not significantly correlate with any of the SABAS measures ($r(304)=.00$ to $-.02$, $p>.05$); this contra-indicative SAQ subscale was hypothesised to have a negative relationship with the SABAS, but these results are not surprising when considering the reliability issues associated with the SAQ. Overall, the significant correlations identified between SABAS scores and SAQ scores support the convergent and construct validity of the SABAS measure.

Authorial identity as measured using Ballantine et al.'s (2013) three-factor model of the SAQ

Subscales for Ballantine et al.'s (2013) model of the SAQ were calculated using the factor structure presented in their article and 12 of the 18 items from Pittam et al.'s (2009) SAQ. The first of these subscales, understanding authorship and plagiarism, was positively correlated with all of the SABAS subscales and SABAS total scores ($r(304)=.18$ to $.39$, $p<.01$). The other factor conceptualised as indicative of authorial identity, authorial approach to writing, had weak positive relationships with SABAS total scores ($r(304)=.26$, $p<.01$), SABAS authorial confidence subscale scores ($r(304)=.30$, $p<.01$), and identification with author ($r=.19$, $p<.05$). These significant correlations were in line with predictions, but authorial approach to writing did not significantly correlate with the SABAS valuing writing subscale ($r(304)=.05$, $p>.05$).

Ballantine et al.'s (2013) lack of confidence subscale is theorised as a contra-indicative measure of authorial identity; therefore, SABAS scores were predicted to negatively correlate with scores on this subscale. This was the case for total SABAS scores ($r(304)=-.19$, $p<.01$) and two of the SABAS subscales: authorial confidence ($r(304)=-.32$, $p<.01$) and identification with author ($r(304)=-.13$, $p<.05$). However, the valuing writing SABAS subscale correlated positively with Ballantine et al.'s lack of confidence factor ($r(304)=.13$, $p<.05$); this weak, but significant correlation runs counter to the predicted result for this analysis. This unexpected finding is discussed in the concluding sections of the current chapter. Apart from this surprising result, correlations with Ballantine et al.'s subscales support the overall construct validity of the SABAS measure.

6.6.6 Comparison of SABAS Psychometric Properties with SAQ Models

Part of the rationale for developing the SABAS was based on the poor psychometric properties of the SAQ, and the lack of an alternative measure of authorial identity. This made it important to compare the psychometric properties of the SABAS with those of the SAQ in this validation sample. In order to calculate Cronbach's α for the SAQ measure, all items were recoded so that higher values indicated greater authorial identity. Cronbach's α was then calculated for the entire SAQ (Pittam et al., 2009) and the twelve items included in Ballantine et al.'s (2013) alternative model. In addition, Cronbach's αs for each subscale were also calculated; all of these are presented in Table 50.

Table 50. Cronbach's α for SAQ models and subscales

SAQ model	N of items	Cronbach's α
Pittam et al.'s 18 item SAQ model	*18*	*.66*
Confidence in writing	5	.69
Understanding authorship	2	.10
Knowledge to avoid plagiarism	3	.54
Top-down approach to writing	2	.37
Bottom-up approach to writing	2	.40
Pragmatic approach to writing	4	.58
Ballantine et al.'s 12 item SAQ model	*12*	*.62*
Understanding authorship & plagiarism	5	.63
Lack of confidence in writing	4	.54
Authorial approach to writing	3	.37

Cronbach's α for Pittam et al.'s (2009) entire scale was .66 and Cronbach's α for Ballantine et al.'s (2013) 12 item version was .62. Although these figures are acceptable for estimates of internal consistency, they do not meet the >.70 criteria that is considered reliable for a psychometric measure (DeVellis, 2012). In addition, the Cronbach's α statistics calculated for subscales are generally low (see Table 50). This confirms the problems with the SAQ's reliability that were reported in the original studies. Cronbach's α reported for the SABAS and SABAS subscales (all >.79, full details reported in previous section of results) are comparatively high, suggesting that the SABAS has better internal consistency than SAQ measures of authorial identity.

6.6.7 Examining Grade Data for Predictive Validity

Academics in study one suggested that student writers with more authorial identity tended to produce higher quality written work. This suggests that measures of authorial identity would correlate positively with grades. A subsample of 154 participants consented to accessing their grade data for analysis; this only included students from a single institution. Grade point averages (GPAs) for these participants were calculated for the assessment period following their participation in the study; these were then used to examine the predictive validity of the SABAS measurement model. SABAS total scores did not significantly correlate with GPAs ($r(152)=-.09$, $p>.05$). In addition, all three SABAS subscales did not correlate significantly with GPAs ($r(152)=-.02$ to $-.13$, $p>.05$). This indicates that the SABAS measure is not a useful predictor of higher education performance.

6.6.8 Test-Retest Reliability

A subsample of 135 participants (44.12%) responded to the retest request four weeks after the original data collection date; an overview of their demographic information is available in Table 51. All of the participants in this subsample came from one institution.

Table 51. Demographic information for subsample used in test-retest analysis

	Demographic information N(%)			
Gender	Male 49(36.3)		Female 86(63.7)	
Mode of study	Campus 117(86.7)		Online 8(13.3)	
Mature student	Non-mature 94(69.6)		Mature 41(30.4)	
Full time/ part time	Full time 124(91.9)		Part time 11(8.1)	
First language	English 123(91.1)		Non-English 12(8.9)	
Nationality	UK 117(86.7)	Non-UK 16(11.8)		Missing 2(1.5)
Stage of study	First 10(7.4)	Second 59(43.7)	Third 64(47.4)	Master's 2(1.5)

Nunnally and Bernstein (1994) recommend using Cronbach's α estimates of internal consistency to examine test-retest reliability, as retest alphas more than .20 lower than initial alphas indicate significant measurement error. Cronbach's α was calculated for the SABAS and SABAS subscales using participants in this subsample. These are presented for T1 and

T2 in Table 52. These figures indicate that internal consistency at T2 was slightly higher than T1, across total SABAS scores and subscales.

Table 52. Cronbach's α for SABAS scores at T1 and T2 in the test-retest subsample

Subscale	Cronbach's α Time point	
	A	B
Authorial confidence	.76	.87
Valuing writing	.77	.81
Identification with author	.78	.81
SABAS total score	.83	.89

SABAS scores and SABAS subscale scores at T1 were correlated with their respective scores at T2 to examine test-retest reliability. These were statistically significant for SABAS scores ($r(133)=.66$, $p<.01$), authorial confidence scores ($r(133)=.61$, $p<.01$), valuing writing scores ($r(133)=.62$, $p<.01$), and identification with author scores ($r(133)=.58$, $p<.01$). These significant, positive and moderately strong correlations suggest that the SABAS and SABAS subscales are stable over time. These findings show some temporal stability of the SABAS measure and the authorial identity construct. However, the moderate strength of these relationships suggests that authorial identity could also be changeable over time.

To investigate further, paired samples t-tests were used to examine the differences in mean SABAS subscale scores across T1 and T2. There was a decrease in SABAS total scores between T1 (Mean=4.82, SD=.46) and T2 (Mean=4.72, SD=.52); a repeated measures t-test indicated that this decrease was significant ($t(134)=2.91$, $p<.01$, $d=.20$). There was also a statistically significant difference between valuing writing scores ($t(134)=4.67$, $p<.01$, $d=.34$), with mean scores at T1 (Mean=5.44, SD= .52) higher than mean scores at T2 (Mean=5.25, SD=.59). In addition to these significant decreases, there was a statistically significant increase in identification with author scores ($t(134)=6.64$, $p<.01$, $d=-.52$) from T1 (Mean=4.44, SD=.82) to T2 (Mean=4.83, SD=.68). The difference between authorial confidence scores at T1 (Mean=4.63, SD=.53) and T2 (Mean=4.56, SD=.58) was not statistically significant ($t(134)=1.57$, $p>.05$).

These findings suggest that the SABAS measurement model has some degree of temporal stability, but authorial identity can also undergo statistically significant changes over the course of four weeks. Effect sizes indicate that the decrease in SABAS total scores and valuing writing scores were small, whereas the increase in identification with author scores

can be interpreted as medium in size (Cohen, 1988). These results are discussed further in the concluding sections of the current chapter.

6.6.9 Stage of Study Effects

Standardised SABAS total scores and subscale scores were analysed for stage of study effects. Master's students were excluded from this analysis due to the small number in this group (n=7), and one participant left this question unanswered. In addition, data screening revealed that psychology was the only subject with comparable numbers of participants across all three stages of undergraduate study. As a result, only psychology undergraduate students were included in analysis for stage of study effects. These were 127 participants across three stages of undergraduate study: 40 first year students (32.3%), 20 second year students (15.7%), and 66 third year students (52%). Descriptive statistics for SABAS scores and subscale scores across stages of study are shown in Table 53; these figures suggested that the data in this subsample was normally distributed.

Table 53. Descriptive statistics for SABAS scores across stages of study in the subsample used to examine stage of study effects

Scale	Stage of study	Mean	SD	Kurtosis	Skewness	Range
Authorial confidence	First stage	4.45	.63	.99	-.94	2.63 to 5.38
	Second stage	4.48	.52	.08	.46	3.63 to 5.63
	Third stage	4.54	.49	.30	.35	3.38 to 5.75
	Entire subsample	4.50	.54	.90	-.31	2.63 to 5.75
Valuing writing	First stage	5.68	.33	.60	-1.11	4.80 to 6.00
	Second stage	5.49	.40	-.50	-.61	4.60 to 6.00
	Third stage	5.43	.55	1.04	-1.14	3.80 to 6.00
	Entire subsample	5.52	.48	1.88	-1.32	3.80 to 6.00
Identification with author	First stage	4.40	.81	-.23	-.36	2.25 to 5.75
	Second stage	4.21	.69	1.21	-1.04	3.00 to 5.25
	Third stage	4.45	.89	.52	-.42	1.75 to 6.00
	Entire subsample	4.37	.82	-.32	.11	1.75 to 6.00
SABAS total	First stage	4.80	.46	-.16	-.64	3.65 to 5.47
	Second stage	4.71	.41	-.22	-.18	3.94 to 5.53
	Third stage	4.77	.45	.19	.28	3.65 to 5.88
	Entire subsample	4.77	.45	-.11	-.04	3.65 to 5.88

One-way Analysis of Variance tests (ANOVAs) were used to test for stage of study effects relating to each subscale score. These showed no significant effect of study stage on authorial confidence scores ($F(2, 124)=.43$, $p>.05$), identification with author scores ($F(2, 124)=.45$, $p>.05$), or SABAS total scores ($F(2, 124)=.25$, $p>.05$). A one-way ANOVA suggested that there was a significant effect of stage of study on valuing writing scores ($F(2, 124)=3.66$, $p<.05$); however, inspection of Levene's test of homogeneity ($F(2, 124)=4.98$, $p<.01$) indicated that equality of variances could not be assumed for valuing writing scores. In

accordance with recommended practice when homogeneity of variance is not assumed (Field, 2013), an adjusted Welch F-ratio and a Brown-Forsythe F-ratio were calculated (Welch $F(2)=4.78$, $p<.05$; Brown-Forsythe $F(2)=4.52$, $p<.05$); these both suggested that there was a significant effect of study stage on valuing writing scores. The Games-Howell post-hoc test corrects for inequality of variance and has been shown to be accurate when group sizes are unequal (Field, 2013); a Games-Howell post-hoc test revealed a significant difference between stages one and three ($p<.05$).

Means plots for each of the scores were inspected to identify trends in the data; these suggested that there was an unexpected linear downward trend in valuing writing scores (Figure 29) and a linear upward trend in authorial confidence scores (Figure 30). Further analysis was conducted to assess the statistical significance of these trends.

Figure 29. Mean valuing writing scores across stages of study

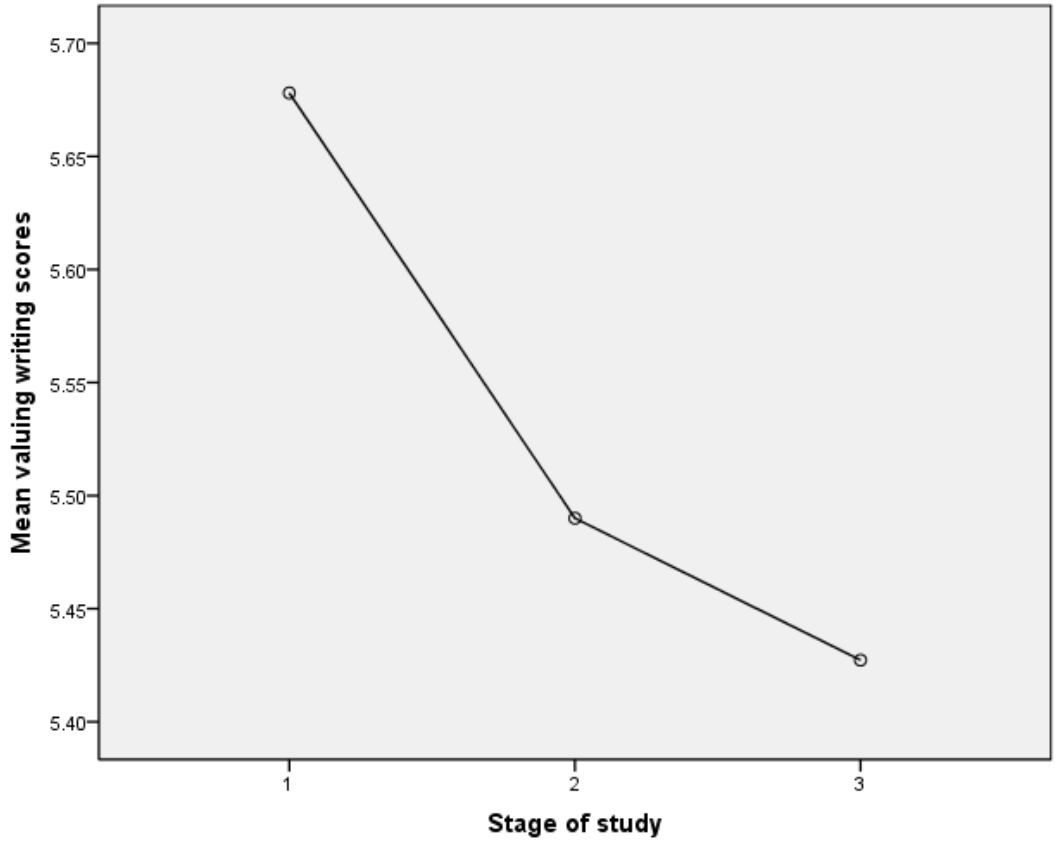
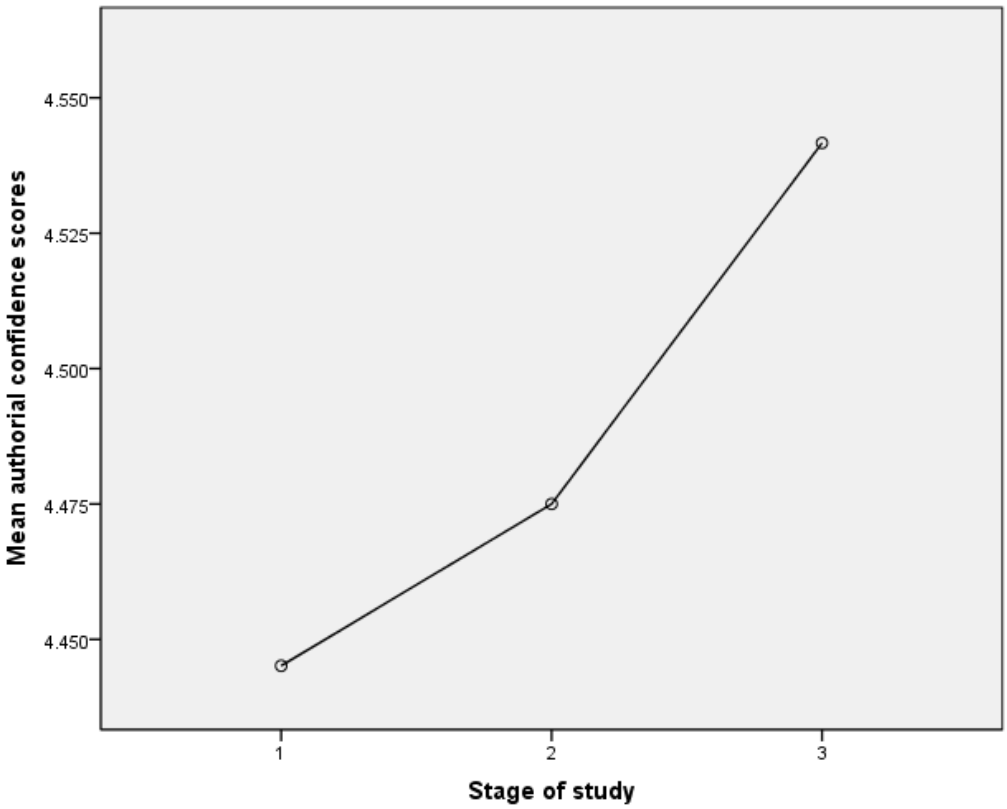


Figure 30. Mean authorial confidence scores across stages of study



A Levene's test on the authorial confidence scores indicated that equal variances could be assumed for this variable ($F(2)=1.44$, $p>.05$). A Jonckheere's trend test was conducted to investigate the increasing trend in authorial confidence scores; this indicated that the trend was not statistically significant ($Z=.34$, $p>.05$). A Jonckheere's trend test was also used to investigate the decreasing linear trend in valuing writing scores; this suggested that the trend was significant ($Z=2.16$, $p<.05$), indicating that there was a linear descending trend in valuing writing scores across the three years of undergraduate study.

6.7 Discussion

Using a multidisciplinary sample of students, study three validated the Student Attitudes and Beliefs about Authorship Scale (SABAS) as a valid and reliable measure of authorial identity in students. Combined with the development study presented in chapter 5, these findings suggest that the three-factor SABAS model is a robust basis for further research on the construct. This addresses a number of important issues relevant to development of the authorial identity approach. Firstly, the SABAS replaces the Student Authorship Questionnaire (SAQ) (Pittam et al., 2009) as a suitable measure of authorial identity. This allows authorial identity to be measured more accurately than previously possible for

continuing research. Secondly, although the convergent validity measures were generally correlated in predicted directions, some of the findings were unexpected, revealing interesting insights about authorial identity. Thirdly, the measurement model is a framework that represents students' shared understandings of authorial identity; when combined with the model of academics' understandings of authorial identity developed in study one, a clear structure of authorial identity elements is presented.

Psychometric properties of the SABAS

Reliability estimates for the SABAS subscales were acceptably high, particularly when compared to those of Pittam et al.'s (2009) SAQ model and Ballantine et al.'s (2013) alternative SAQ model. Some estimates of internal consistency (notably β and ω_h) suggested that an underlying general factor might not be suitable for the SABAS as a measurement model. However, this finding was not demonstrated in study two and further investigation should explore this issue and attempt to replicate these findings. The results of the confirmatory factor analysis also indicated that the three-factor model was an adequate fit for the data that outperformed a one-factor latent variable model. Modification indices did not suggest any major structural changes to the SABAS model that would substantially improve model fit, thus providing further evidence of the SABAS and SABAS subscales' reliability. Bearing in mind that Pittam et al.'s six-factor model performed badly in a validation study (Ballantine et al., 2013), these findings are definitely encouraging. Test-retest reliability was also acceptably high, further supporting the measure's advantages over the SAQ.

The overwhelming number of accurately predicted relationships supports the SABAS's construct validity, suggesting that the construct is related to other aspects of academic writing as hypothesised. This supports recent studies that suggest authorial identity is closely related to other aspects of writing, such as approaches to learning and self-efficacy (e.g., Maguire et al., 2013; Kinder & Elander, 2012). Moreover, the current study identified a link between authorial identity and critical thinking, suggesting that these concepts are closely related. Critical thinking is a desirable outcome of higher education across all disciplines (Kuhn, 1999) and research suggests that students struggle to understand the importance of demonstrating this in their writing (Jessen & Elander, 2009), so this link should be examined in more detail. Further research should also attempt to identify authorial identity's relationship with other pedagogic constructs that have been examined in writing research, such as planning strategies (Norton, 1990), writing apprehension (Daly & Miller, 1975) and

composition processes (Lavelle, 1997). In addition, authorial identity's relationship to common conceptions of writing held by undergraduates could go some way to explaining problematic writing behaviours reported by Norton (1990).

Despite the promising validity and reliability findings reported in the current study, the three-factor SABAS model did not fit the data well enough to be classed as an exact fit according to the CFA χ^2 test. A non-significant χ^2 is the definitive indicator of an excellently fitting model (Barrett, 2007). As inspection of the standardised residual covariance matrix failed to identify probable sources of misfit, there is room for further exploratory work to improve the measure by reducing error and covariance that is not accounted for. In addition, the SABAS did not perform well on predictive validity. However, seeking to identify a statistically significant relationship between SABAS scores and grades was ambitious with the sample size of the current study. Higher education performance can be influenced by a multitude of individual factors and confounding variables, so the lack of a significant finding is not surprising. Further research could examine the predictive power of authorial identity on grade performance in conjunction with other pedagogic measures, or examine other predictable outcomes, such as plagiarism related writing behaviours. Overall, the results of psychometric analyses conducted in the current study support the validity and reliability of the SABAS as a measure of authorial identity in student populations. The findings also show that the SABAS has greater reliability when compared with alternative measures of authorial identity, making the SABAS a preferred measurement tool for research and applied settings.

Unexpected results and findings

The unanticipated results are arguably more informative as they identify aspects of authorial identity that were not previously included in models of authorial identity. Although these findings must be interpreted cautiously, especially considering the low reliability of Ballantine et al.'s (2013) 'lack of confidence' subscale, they suggest that valuing writing more highly could be linked to a lack of confidence. Interestingly, valuing writing was not correlated negatively with any confidence related subscales, despite the inclusion of Harbke's (2007) self-efficacy in scientific writing (SESW) measure. In fact, it was positively correlated with confidence in writing as measured by Pittam et al.'s SAQ model, confidence in critical thinking as measured by the CritTTPsych (Stupple et al., 2011), and the authorial confidence subscale from the SABAS. Inspection of the items that contribute to Ballantine et al.'s lack of confidence subscale revealed that all of them were negatively worded. This suggests that

there is an aspect of confidence in writing that is only measured by contra-indicative items; this could be an indication that some confidence issues are conceptualised as a form of negative self-belief. Valuing writing also failed to correlate significantly with a number of SESW subscales, suggesting that these issues could be specific to certain domains, such as content, style and literature searching. However, the lack of significant correlations with SESW subscales is only relevant to science disciplines, so these findings warrant further investigation in other disciplinary contexts. The combination of these findings suggest that valuing one's own writing ability is linked to negative self-belief in these specific domains.

In addition to unexpected findings between measures, some of the results relating to authorial identity across stages of study were also unanticipated. However, other authorial identity studies have also identified a mix of trends across stages of study (e.g., Pittam at al., 2009; Ballantine & Larres, 2012) and it is unclear whether these are due to disciplinary differences or other contextual issues. The replication of these findings using the more reliable SABAS does suggest that authorial identity is not a fixed construct; in some ways, a changeable pedagogic construct is encouraging as it implies that targeted interventions could be effective. However, the unpredictability of these trends makes it difficult to pinpoint the causes for fluctuations. In addition, the nature of the statistically significant descending trend in valuing writing scores is worrying, as it indicates a fall in the perception of writing as something to be highly valued by students. This may reflect the lack of writing pedagogy in later stages of undergraduate degrees, or the increased proportion of learning that is focused on other areas, such as theoretical knowledge and statistical literacy. It is unclear whether this trend is relevant to a general undergraduate population, as issues with subsample sizes meant that analysis could only be carried out on psychology student participants.

Further research using the SABAS as a reliable measure could identify whether this trend is consistent across disciplines, institutions or cohorts of students. Differences in identified trends could also serve to better understanding of the mechanisms facilitating development of authorial identity in students. A difference in valuing writing was also found across the two time-points used to assess test-retest reliability. Previous attempts to examine authorial identity across repeated measures have failed to identify significant changes, although this could be due to limitations from sample size (Maguire et al., 2013). The statistically significant decrease in total SABAS scores and valuing writing scores may reflect the linear

downward trend identified across stages of study, or be due to the context of data collection; it is worth noting that the subsample for this analysis came from a single institution.

The statistically significant increase in identification with author scores is encouraging, but subject to the same caveats related to sample generalisability; it cannot be discounted that the researcher's presence as a lecturer at this institution did not have a substantial effect of student attitudes towards authorship. The combination of these unexpected findings highlight the need for further research examining authorial identity as a psychological construct and the way it mediates student writing. In particular, sources of model misfit were not successfully identified, suggesting that more exploratory work could be done to improve the SABAS model of authorial identity. Alternative measurement approaches, such as item response theory and Rasch analysis, could be employed to develop the current classical test theory model. The abstract construct of authorial identity and its recent operationalisation as a psychological construct explain some of the difficulties with specifying a better fitting model. Moreover, the qualitative findings of study one suggest some elements of authorial identity are related to tacit knowledge, indicating that they are, by definition, difficult to explicitly define and measure.

Contribution to models of authorial identity

Although the current study has identified gaps in knowledge about authorial identity, the findings have also contributed to better understanding of authorial identity as a psychological construct. In particular, statistical evidence has been presented that identifies three stable latent factors underlying student attitudes and beliefs relating to authorial identity. As discussed in the previous chapter, this model converges with academics' understandings of authorial identity that were identified with qualitative analysis in study one. When incorporated together, these models highlight the disparity between student conceptions of authorial identity and the beliefs held by academic staff. In addition, the measurement model is a theoretical framework for understanding authorial identity as a psychological construct. Confirmation of the three-factor model in the current study is important because it supports the robustness of the model developed in study two. This allows the three-factor model to serve as a starting point for further work exploring other aspects of authorial identity, such as those identified in study one.

The authorial identity approach is situated within an academic literacies framework that considers genre and context (Abasi et al., 2006). As such, researchers examining authorial identity should be aware of the disciplinary differences in writing that are situated in traditional and historical contexts (Russell, 2002). The model validated in the present study used a multidisciplinary sample, although it was not as representative of the general student population as originally intended. This model supports a multidisciplinary approach to authorial identity; this should not be taken as a call to conduct all authorial identity research on multidisciplinary samples, but rather as the establishment of a general model that can be referred to by researchers working in specialised contexts. In addition, the SABAS model can be considered as an improvement to Pittam et al.'s (2009) original model of authorial identity. Although Pittam et al.'s SAQ model covered a wider range of authorial identity factors, their content validity was questionable; factors included in the SABAS model were developed using a series of systematic procedures in study two. As a result, the SABAS model can be interpreted with more confidence than the original SAQ model and Ballantine et al.'s (2013) modified SAQ model.

Exploration of the model can follow a number of different avenues, two of which are recommended as issues to address, firstly, the model's applicability to other disciplinary contexts should be examined. This could use the 17 item SABAS as a starting point or a larger pool of the original items generated in study two. Secondly, due to the findings of low ω_h and β, hierarchical factor analysis can be used to establish whether a general factor underlies authorial identity. It is worth noting that these estimates were higher in the development study by design; decisions to drop items were based on corrected-item total correlations in the development sample. As these items were dropped, ω_h and β would have increased. If the corrected item-total correlations are unreliable across samples, there may be a need to re-examine some of the items that were discarded. However, this is only applicable if replications and further validation studies confirm this as an issue in larger representative samples.

Currently, the SABAS model of authorial identity is the best psychological model of student authorial identity available; further research should add to this model from perspectives other than psychological measurement. For example, textual analysis of pronouns as indicators of authorial identity (e.g., Hyland, 2002; Tang & John, 1999) could be extended to include subtler aspects of authorial identity resultant from the psychological factors identified in the

SABAS model. Essay analysis has also been used by pedagogic psychologists to identify behaviours indicative of specific writing strategies (e.g., Norton, 1990), these methods could be adopted to analyse writing from students with differing levels of authorial identity; this could expand the model to identify features of authorial writing. In addition, the SABAS model offers a framework suitable for developing pedagogic interventions and evaluating their effectiveness. In some respects, the supporting of application is the most important feature of the current study. The current model will inform development of pedagogic strategies for reducing plagiarism, and that these strategies will offer institutions an evidence based alternative to relying on deter and detect models alone.

6.8 Summary

The current chapter presented a study aiming to validate the Student Attitudes and Beliefs about Authorship Scale (SABAS) and the associated measurement model. The reported validation study achieved this using robust methods of scale validation and statistical analysis. In addition, the transparent reporting of findings and methods serves to facilitate development of the authorial identity approach to plagiarism, and support further research. Overall, validation of the SABAS provides a credible theoretical framework for continuing research. A discussion of the findings from all three studies follows in the concluding chapter of the current thesis.

Chapter 7: Overall Discussion

7.1 Overview

This thesis has presented a series of studies that substantially contribute to theories of authorial identity. The findings of each study have been discussed in isolation within separate chapters. The current chapter presents an overall discussion of the research from all three studies. The discussion is structured around four sections: presentation of a new model of authorial identity, pedagogical recommendations in relation to plagiarism, the strengths and limitations of the research, and directions for future authorial identity research.

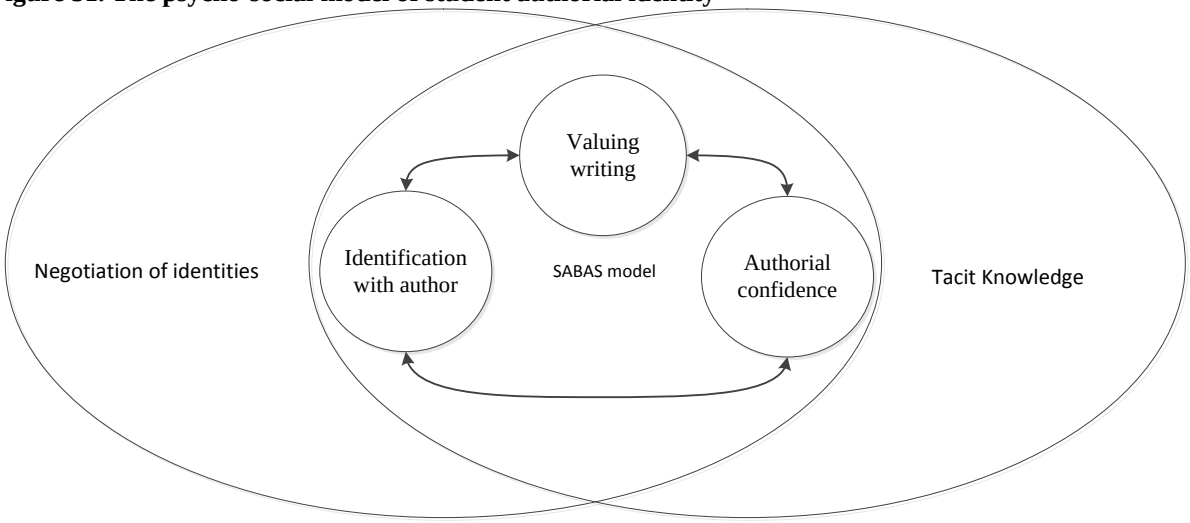
The findings of the current research show that authorial identity is a complex construct with cognitive, affective and social factors. The first study identified understandings of authorial identity held by professional academics that included confidence, values, attachment and ownership, thinking and goal setting. Another important finding from study one was the identification of two integrative aspects of authorial identity that were understood to mediate the other features; these were authorial identity as tacit knowledge and negotiation of identities. The second and third studies identified a latent variable model of authorial identity in students that emphasises the importance of values, confidence and self-identity. In addition, these studies developed a valid and reliable measure of student authorial identity. The current chapter presents a summary of these findings and proposes a psycho-social model of authorial identity.

7.2 A Psycho-social Model of Student Authorial Identity

Previous research operationalised the concept of authorial identity and developed a framework for investigating authorship and student plagiarism (Pittam et al., 2009). Further development of Pittam et al.'s work has also presented an alternative model of authorial identity based on the original Student Authorship Questionnaire (SAQ) model (Ballantine et al., 2013). These frameworks focused on the explicit attitudes and beliefs of students to identify latent variables associated with authorial identity. The findings of qualitative and quantitative studies presented in the current thesis converge to identify three key aspects of authorial identity. Authorial confidence, authorial values and authorial identification can be conceptualised as three salient components of authorial identity in student academic writing. By including academics' attitudes and beliefs about student authorship, an expanded model of authorial identity can be proposed; this psychological model of authorial identity differs from previous models of authorial identity (e.g., Pittam et al., 2009; Ballantine et al., 2013) by incorporating abstract aspects that are difficult to explicitly measure. Importantly, this

model does not include the approaches to writing concepts emphasised in other authorial identity frameworks. This means that the current model focuses on psychological aspects of authorial identity rather than the behavioural elements of writing. The findings of study one and the content validity parts of scale development suggest that approaches to writing are not understood as elements of authorial identity. The model presented here includes the three-factor Student Attitudes and Beliefs about Authorship (SABAS) measurement model and the two integrative themes identified in the qualitative study (Figure 31).

Figure 31. The psycho-social model of student authorial identity



This model represents the core features of authorial identity identified in the current thesis. The three interrelated elements in the centre are aspects of student authorial identity that were reliably measured by the SABAS model. The two overlapping ellipses are abstract features of authorial identity that academics identified as underlying the other elements of authorial identity. Although all components of the model are connected, identification with author is conceptualised as more closely related to negotiation of identities and authorial confidence is more closely linked with tacit knowledge.

Academics in the first study suggested that their own authorial identities were closely related to their identities as members of academic disciplines. Analysis revealed that academics managed these identities with relative ease, but they perceived students to struggle with identifying as members of an academic discipline and as authors. Agreement with SABAS items for the 'identification with author' subscale indicated that the respondent associated the role of author with self-identities; this can be seen as a manifestation of the individual

successfully negotiating identities and conceptualising authorship as an important part of their identity. The link between tacit knowledge and authorial confidence is consistent with Elton's (2010) assertion that academic writing is a form of tacit knowledge. Agreement with SABAS items for the 'authorial confidence subscale' indicated that the respondent was confident in their own abilities as an academic writer, suggesting that they had mastered some aspects of this implicit skill, or at least believed that they had.

Researchers have situated authorial identity as a construct sensitive to the social contexts of writing (Abasi et al., 2008), but previous models of authorial identity have not formally included social aspects. The current psycho-social model includes social mediators of authorial identity as the two underlying concepts of negotiating identities and tacit knowledge. Negotiation of identities refers to the successful management and recognition of an individual's status in relevant groups; for example, one's identity as a student, psychologist or author. Integral to negotiation of identity is the individual's membership of a social group and an understanding of that group identity as associated with the concept of authorship. Conceptualising authorial identity as a form of tacit knowledge also introduces a social element to the psycho-social model of authorial identity. Tacit knowledge transfer is facilitated by socialisation, demonstration and practice (Polanyi, 1998; Tsoukas, 1996), processes that rely on social interaction between experts and novices within a given domain.

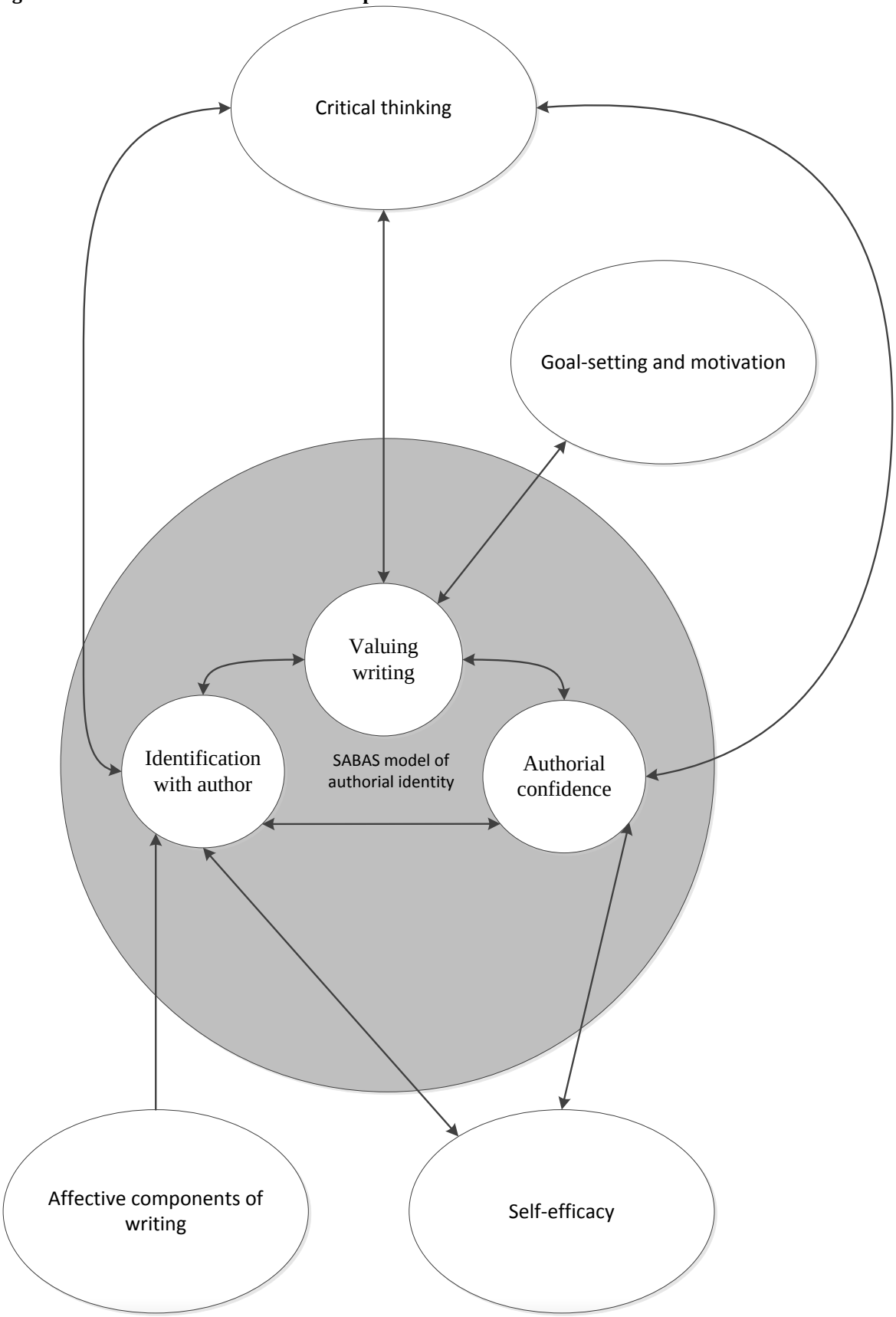
Some aspects of authorial identity that were identified in study one have not been included in the psycho-social model presented above. One of these subthemes was 'attachment and ownership'. This particular subtheme still represents an important part of authorial identity, but was not a salient factor identified in the latent variable model developed in study two. However, aspects of the 'attachment and ownership' subtheme were included in the 'identification with author' SABAS subscale and early examination of the factor suggested it could have been interpreted loosely as one related to attachment. However, the removal of items that did not load strongly resulted in a factor with items suggesting a different interpretation. This suggests that the 'identification with author' factor is linked to attachment and ownership. As a result, attachment and ownership have been conceptualised as external to the core model of authorial identity, but closely associated with the construct. The 'authorial thinking' and 'authorial goals' subthemes were also absent from the latent variable model identified in study two and are also omitted from the psycho-social model of authorial identity that has been presented. These concepts were also conceptualised as associated

features of academic writing that are relevant, but not integral, to authorial identity. These relationships and others are discussed in the following section of the current chapter.

Authorial identity in relation to other aspects of student learning and writing

The current studies identified a number of links between authorial identity and other constructs. The findings of study one suggested that authorial identity was related to self-efficacy and critical thinking. Validated measures of these constructs were used to examine the SABAS's convergent validity in study three. This identified significant relationships between SABAS subscales, self-efficacy in scientific writing and critical thinking. Subscales from Harbke's (2007) Self-Efficacy in Scientific Writing (SESW) correlated significantly with the 'identification with author' and 'authorial confidence' SABAS subscales. Critical thinking, as measured using Stupple et al.'s (2011) Critical Thinking Toolkit for Psychology (CritTTPsych) significantly correlated with all three SABAS subscales. For the purposes of clearly presenting the SABAS model's connections with other constructs, the 'authorial thinking' subtheme identified in study one can be subsumed within the critical thinking construct. Figure 32 presents the SABAS model of authorial identity's relations to other constructs. In addition to the links identified in study three, the diagram includes two elements that are related to subthemes from study one: 'attachment and ownership' is associated with affective components of writing and 'authorial goals' are encompassed by goal-setting and motivation. However, these two components should be interpreted with caution as the SABAS latent variable model did not identify them as salient parts of authorial identity.

Figure 32. The SABAS model's relationships with other constructs



The absence of authorial goals and affective components to writing could be due to the SABAS model's focus on student attitudes and beliefs about authorship. The analysis in study one suggested that academics understood rhetorical goals and attachment to writing as issues that were particularly problematic for students. Whilst the academics themselves recognised pride and attachment in relation to their own work, a number pointed out that students did not feel the same way about their own work. Furthermore, the 'authorial goals' subtheme was characterised by an understanding that students were ignorant of the communicative aspects of writing, due to perceived focus on instrumental goals and assessment. Therefore, the findings of study one suggest that these are important elements of authorial identity, but they could be difficult to measure discriminately in students. Feeling attached to written work and prioritising rhetorical goals could be unusual in students, making them features of authorial identity that are only evident in postgraduate study and beyond.

It is clear that authorial identity is a complex construct that relates to many other aspects of higher education learning and teaching. The current research has identified a number of these links, some of which have been confirmed with empirical evidence. In addition, some unexpected findings from study three suggest that authorial identity is also related to other constructs that are not established. These findings should be interpreted with caution, but they do suggest that negatively phrased items could measure qualitatively different functions to positively worded items, particularly in the case of writing self-confidence. Overall, the current research studies have contributed substantial insights into the psychological mechanisms of authorial identity. These strong theoretical foundations serve as a basis for continuing pedagogic development and research adopting an authorial identity approach. The following section presents some pedagogic recommendations that arise from the findings of the current thesis.

7.3 Pedagogical Recommendations

Scholars examining plagiarism have argued for the development of pedagogic interventions for reducing plagiarism (Macdonald & Carroll, 2006; McGowan, 2005). Whilst the findings of the current thesis support the suggestion that authorial identity be considered in the development of pedagogical initiatives (Ballantine & Larres, 2012; Elander et al., 2010; Maguire et al., 2013), the recommendations for pedagogy differ in some respects. Firstly, authorial identity pedagogy needs to be embedded into the core teaching of disciplinary

content; isolated interventions may be ineffective at addressing the social aspects identified in study one. Secondly, these pedagogies should be evaluated with robust outcome measures, such as the SABAS. In order to allow embedding of authorial identity pedagogy, evaluations should make use of different research designs available to tutors. Thirdly, it is recommended that tutors adopting an authorial identity approach encourage the conceptualisation of writing as more than just assessment. The detrimental influence of instrumental goals on authorial identity could be difficult to overcome, and tutors need to be aware of this issue when developing pedagogic initiatives. Finally, authorial identity interventions need to target academic staff to increase awareness of the need to develop the construct in students.

Embedding authorial identity

The lack of statistically significant differences in authorial identity across year groups suggests that current instruction methods do not develop authorial identity. In fact, a significant linear downward trend suggests that students value writing less as they progress through stages of study. Previous attempts to improve authorial identity have focussed on specific interventions (e.g., Elander et al., 2010) or explicit instruction about authorial identity alongside course teaching (e.g., Maguire et al., 2013). The findings of study one suggest that authorial identity can be conceptualised as a form of tacit knowledge. This indicates that it would be difficult to develop authorial identity with explicit teaching. Eraut (2000) argues that tacit knowledge is transferred by socialising novices into communities. In the case of authorial identity and academic writing, socialisation into disciplinary communities would be a suitable option, particularly when considering the other integrative theme identified in study one - negotiation of identities. Developing students as members of disciplinary communities could improve their authorial identity and reduce their risk of plagiarism.

Encouraging student communities is not a new idea; Lave and Wenger (1999) suggested using communities of practice to facilitate learning and Rust et al. (2003) argue that developing communities can allow students to understand assessment criteria. Echoing these findings, the results of study one suggest that authorial identity could be improved by encouraging students and staff to form reflective communities. Furthermore, these issues emphasise the need to embed authorial identity and writing pedagogy into the teaching of content. Explicitly outlining some aspects of student learning can be damaging rather than helpful; assessment criteria is one such example (Norton, 2004; Rust et al., 2003) and Elton

(2010) has suggested that explicit instruction on academic writing could result in deterioration of performance. Isolating authorial identity and explicitly teaching this aspect of academic writing could have unintentional and less than desirable results. However, this effect has not been demonstrated in evaluation of an explicit authorial identity intervention by Elander et al. (2010). Despite this, the development of authorial identity pedagogy should be conducted carefully and cautiously, so as not to have damaging results. One of the ways that this can be ensured is by evaluating authorial identity initiatives with robust and critical research.

Writing tutors from the academic literacies approach have also been particularly critical of pedagogy that attempts to bolt on interventions (Lea & Street, 2006). Instead, Lea (2004) recommends embedding interaction with texts into the teaching of content as an alternative strategy. Furthermore, Norton, Scantlebury and Dickins (1999) have shown that effective instruction offered as additional sessions can be hampered by poor attendance by undergraduate students. This suggests that attempts to improve authorial identity should be deeply embedded into course development. Students should be encouraged to engage with different genres of text (Lea, 2004) and write for audiences other than their academic tutors. These strategies could emphasise writing as a communicative task that is more than just a form of assessment.

Evaluating authorial identity initiatives

There have been a number of reported attempts to improve student authorial identity. Chief among these is Elander et al.'s (2010) evaluation of an authorial identity intervention delivered across three institutions. More recently, Maguire et al. (2013) presented a study examining authorial identity in the context of an on-going initiative to improve authorial identity, and Ballantine and Larres (2012) reported SAQ findings in the context of a first-year student development programme that included explicit instruction in relation to authorial identity. However, Elander et al.'s study was the only intervention that formally evaluated the intervention with pre and post measures.

Further development of authorial identity pedagogy needs to be evaluated using objective measures. The current research has presented one such measure for examining authorial identity and it is recommended that the SABAS be used in future evaluations of authorial identity-based pedagogic initiatives. In addition, authorial identity approaches to plagiarism

should be evaluated with control groups that receive no instruction on plagiarism or standard teaching designed to deter and detect plagiarism. Other experimental groups receiving instruction on mechanical elements of referencing could also be included. Evaluation strategies that use controlled experimental designs could lend support to the idea that embedding authorial identity development into a course is worthwhile. However, these controlled research designs could be difficult to implement in the context of higher education teaching environments, particularly considering the need to embed instruction fully into course design.

Authorial identity approaches should continue to be evaluated rigorously and there are alternative methods available to tutors using the authorial identity approach. Pedagogical action research offers an opportunity for academics to reflect on their teaching practices and contribute to the scholarship of learning and teaching (Norton, 2009). Norton et al. (2010) identified the encouraging finding that new lecturers view their roles as facilitators of learning rather than passive transmitters of knowledge. However, Norton et al. caution that innovative teaching practices can be tempered by bureaucratic and rigid policies maintained by institutions. Therefore, the use of action research to embed authorial identity in course design is advocated to provide evidence of effectiveness to quality assurance assessors.

Writing as more than assessment

The 'authorial goals' subtheme from study one raises concerns about student academic writing. Findings suggested that students were driven by instrumental goals and academics expressed concerns that this was having a detrimental effect on development of authorial identity. The use of explicit assessment criteria has been conceptualised as a problematic practice that encourages students to adopt superficial strategies when completing assessments (Norton, 2004) and the current research highlights concerns that these strategies could influence authorial identity. Furthermore, Sommers and Saltz (2004) identified that students who conceptualise writing as having purposes other than assessment tend to improve more than students who only relate writing to assessment.

Writing to learn approaches (Bernstein & Johnson, 2004; Bangbert-Drowns et al., 2004) have been popular in the United States (US) for developing writing and encouraging deeper learning. In the United Kingdom (UK), Lea (2004) has suggested an academic literacies approach that involves encouraging students to interact with different genres of text. In order

to overcome any impact of instrumental goals, development of authorial identity should be supported by the use of similar pedagogies based on writing to learn and academic literacies. In particular, students should be encouraged to write for different audiences and purposes. Although this has been recommended before (e.g., Kroll, 1984), the current research suggests that students would benefit from using these activities to reflect on authorial identity. Redd-Boyd and Slater (1989) found that assigning audiences for written tasks can improve the motivation and persuasiveness of undergraduate students. Following these exercises with reflection on the different writing produced could highlight communicative aspects of writing without explicitly discussing authorial identity. Furthermore, discussion of these aspects in peer groups could facilitate development of junior scholarly communities. Peer mentoring has been explored in the context of writing centres (Bakhshi et al., 2009) and student transition (Elander et al., 2011), but the use of peer groups to facilitate understanding of authorship has not been explored.

The findings of the current thesis suggest that students would benefit from socialisation into the practices and conventions of academic discourse. Although some nuances of scholarly communication can be difficult to grasp, there are explicit discussions available in published forms. Students should be encouraged to read response papers and conference proceedings where academics directly address each other and actively engage in discourse. Given the widespread availability of technological platforms that enable and enhance group discussions, students should be encouraged to form peer groups that engage in similar discussions relating to their own writing. Although students can be reluctant to engage in activities outside of instruction for assessment (Norton et al., 1999), efforts should be made to highlight that writing in higher education is more than just a tool for assessment.

Authorial identity interventions for academic staff

Study one suggested that some staff assumed their colleagues were aware of authorial identity as an important part of writing pedagogy and also suggested that all of their colleagues would identify with the role of author. In fact, study one also found that this was not the case. Combined with the identification of authorial identity as a form of tacit knowledge, these findings suggest that academics would benefit from increased awareness of authorial identity issues.

The ‘tacit knowledge’ theme from study one suggested that writing with authorial identity was difficult to explicitly instruct. In addition, academics found it difficult to codify how they assessed the degree of authorial identity in a written assignment. Price (2005) has suggested that academics form communities of practice to share views about assessment marking. This can facilitate the transfer of tacit knowledge and allow multiple assessors to achieve shared perspectives in relation to marking. Knowledge about authorial identity could be shared in this way, suggesting that academics should discuss and reflect on this aspect of writing in communities. It was also noted that a number of participants in study one suggested that they rarely considered authorial identity aspects of writing. Furthermore, many expressed gratitude for the opportunity to reflect and consider authorial identity, suggesting that there is a need to facilitate reflection on writing in academic departments.

Authorial identity is difficult to define, making it a concept that needs to be considered with careful reflection. Although improvement of academic writing has been explored in the current thesis as an aim for students, it should also be recognised as a developmental target for professional academics. The findings of study one suggest that academics do not always identify as authors, even when they are extensively published. This indicates that academics would benefit from reflection about the rhetorical and affective components of their writing, not just by counting submissions for the Research Excellence Framework.

7.4 Strengths and Limitations

The research conducted in the current thesis used a psychological perspective to examine authorial identity in students. The findings are supported by robust and systematic methods of investigation. However, there are some limitations of the current thesis that are important to discuss. The current section presents some aspects of the research that can be considered as strengths and other limitations of the approach that was adopted. In addition, ways to address these limitations are mentioned and a number of recommendations for addressing them are discussed in a following section about future research.

Methodological issues

The current research was conducted using well-established psychological methods grounded in psychometric theory and previous research. The use of robust and systematic methods of scale development has resulted in a SABAS measure that authorial identity researchers can use with confidence. This is further enhanced by the transparency of reporting in the current

thesis. One criticism of scale development research is the lack of detail in reporting that can accompany articles with limited space in publications (Jackson et al., 2009). The quantitative studies have been reported in full with detailed statistical information relating to the SABAS's performance in test samples. Furthermore, the qualitative analysis includes an account of the coding procedures and philosophical perspectives that underpinned the research. However, it is also recognised that other methodological approaches would have been suitable for scale development.

The SABAS was developed using statistical techniques based on the widely used principles of Classical Test Theory (CTT). Other methods such as Item Response Theory (IRT) (Embretson & Reise, 2000) techniques and Rasch analysis (Rasch, 1980) are considered superior to CTT techniques for advanced levels of analysis. Mellenbergh (2011) suggests that IRT methods overcome limitations associated with CTT, such as the assumption that items represent parallel tests or measurement by fiat, which refers to the assumed equal spacing of points on a Likert scale. However, some psychometric researchers have argued that IRT models can be difficult for applied psychological researchers to interpret (Devellis, 2012), making their increased statistical sophistication a weakness. In addition, the use of Confirmatory Factor Analysis (CFA) with Exploratory Factor Analysis (EFA) is judged as an adequate method of overcoming some of the issues identified by advocates of IRT (Schweizer, 2010). Furthermore, DeVellis suggests that CTT methods be judged by the practical output of the procedures and points out that psychometric scales developed using CTT function well in terms of reliability and validity in applied settings. Overall the robust use of CTT techniques to develop the SABAS is a strength, as it allows the measure to be interpreted by researchers unfamiliar with the technicalities of psychometric theory. Furthermore, the use of CTT in development of the SABAS does not rule out the future use of IRT methods to evaluate the performance of individual SABAS items and refine the scale.

Other methodological issues relate to the qualitative study reported in chapter four. Despite thematic analysis being a commonly used method in psychology, it has been criticised for not being as rigorous or sophisticated as other forms of qualitative analysis (Braun & Clarke, 2006). Guest et al. (2013) further point out that critics have questioned the reliability of thematic analysis and also suggested that the technique misses nuanced information in data. However, Braun and Clarke have suggested that these criticisms are due to the misuse of thematic analysis in some research. As it is the most common form of qualitative analysis in

the social sciences, findings of thematic analysis are often presented without reference to the coding strategies or level of analysis used. In contrast to these poor practices that are responsible for thematic analysis' reputation, the method used for the current study is reported transparently. The current thesis includes an outline of the philosophical underpinnings of the research, the coding strategy used, and evaluation of the analysis in relation to Braun and Clarke's checklist for a robust analysis. These factors combine to meet Yardley's (2008) standards for a valid and reliable piece of qualitative research.

Regarding the comparison of thematic analysis with other techniques, it was recognised that thematic analysis is often judged as less sophisticated than specialised methods such as Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009), discursive psychology (Edwards & Potter, 1992) or grounded theory (Glaser & Strauss, 1967). However, thematic analysis has the potential to include many elements of these methods without being restricted to the philosophical perspectives that typically accompany them. Braun and Clarke (2006) suggest that this flexibility is one of the main strengths of thematic analysis. In the current research, the relatively descriptive analysis of the data corpus was intentional. As an exploratory analysis of academics' understandings of authorial identity, the study was designed to present a broad overview of themes across a sample that is comparatively large in relation to those recommended for other forms of qualitative analysis. For example, Smith et al. (2009) suggest that IPA be used with no more than 12 participants. Use of thematic analysis was suitable for the research aims of study one and for supporting item generation for the SABAS. Studies using other qualitative methods would contribute to further understanding of authorial identity and the use of thematic analysis in study one allows the findings to inform research from any perspective. A number of topics related to authorial identity would be suitable for discursive or phenomenological analysis and some of these are discussed in the future research section of the current chapter.

The combined use of qualitative and quantitative methods has also strengthened the findings presented in this thesis. Mixed-methods research has been growing in popularity and its use is recommended for investigating complex social issues (Creswell, 2009). The use of a sequential mixed-methods design in the current research allowed in-depth exploration of authorial identity as a psychological construct, and the results are enhanced because of this process. The psycho-social model of authorial identity presented in the current discussion includes aspects of authorial identity identified in the qualitative study and empirically

observed in the quantitative studies. This strengthens the validity of the conclusions, allowing recommendation of the psycho-social model of authorial identity as the basis for developing the authorial identity approach to plagiarism.

Overall, the methods used in the current studies were robustly employed and well-suited to conducting exploratory research on the topic of authorial identity. Other methods are also suitable for exploring authorial identity. Findings presented in the current thesis can inform the use of alternative methods in future, because the methods used are clearly reported and compatible with a number of research perspectives.

Understanding authorial identity

The studies presented in the current thesis have made substantial contributions to understanding authorial identity as a psychological construct. A number of these contributions have been the focus of preceding sections of the current discussion; however, it is also acknowledged that the findings reported here are not entirely conclusive. Although the psycho-social model of authorial identity is an improved model of authorial identity, there are other questions regarding authorial identity that remain unanswered.

Firstly, a psychological model of authorial identity is important for supporting the development of an authorial identity approach, but other approaches can examine non-psychological aspects of authorial identity. For example, the understandings of professional academics have been examined through qualitative analysis, but the actual judgements made regarding authorial identity in-text has not been examined closely. Applied linguistic researchers have identified personal pronoun use as an explicit marker of authorial identity (Hyland, 2001b; Tang & John, 1999), but the findings of study one suggest that academics evaluate authorial identity using subtle criteria that they themselves are not consciously aware of. Recommendations for future research combining psychological methods with other research approaches are discussed in the following section of the chapter.

Another element of authorial identity not addressed in the current studies is the importance of subject and genre. Although an important link between negotiation of disciplinary identity and authorial identity was identified in study one, this was not further explored in the later studies. Other approaches to writing have recommended that pedagogies should be sensitive to the social context of writer identity (Clark & Ivanic, 1997), genres (Hyland, 2003) and

subject disciplines (Baynham, 2000). Academic literacies approaches have been particularly critical of writing pedagogy that ignores topics of social-context, genre and disciplinary conceptualisations of writing (Lea & Street, 2006). The authorial identity approach does not ignore these influences, but the research studies in the current thesis do not directly consider these topics. For example, data about the disciplines that participants studied was collected, but analysis did not examine differences in authorial identity between students of particular subjects. This is because the samples were not large enough to analyse these differences reliably. However, the samples for studies two and three compare favourably in size and discipline heterogeneity to the samples used for previous authorial identity research. For example, Pittam et al. (2009) used an adequately large sample of 364 participants and Ballantine et al. (2013) recruited a sample of 588 students. However, Pittam et al.'s sample consisted entirely of psychology students and Ballantine et al.'s participants were all accounting students. The SABAS model identified in study two and the associated psycho-social model of authorial identity is a general model of student authorial identity developed and confirmed on a multidisciplinary student sample. However, the sample was not as diverse as originally expected and a number of academic disciplines remain underrepresented. This is a limitation of the current studies that can be addressed with further research recommended in a following discussion.

7.5 Further Research

In order to develop the authorial identity approach to plagiarism, further research building on the psycho-social model of authorial identity needs to be conducted. The current section proposes five main recommendations for future research that would develop the theoretical basis for authorial identity pedagogy and address a number of the limitations identified in the preceding section. Firstly, development of the psycho-social model presented here can be complemented by research from other approaches, such as textual analysis, to examine authorial identity from a product centred perspective. Secondly, the reliability and validity of the SABAS should be evaluated with other samples. This would identify aspects of authorial identity that are important within different academic writing contexts. Thirdly, the current research has identified links between authorial identity, self-efficacy and critical thinking, but other aspects of writing are also likely to be related to authorial identity. In particular, research to establish the relationship between authorial identity and plagiarism-related writing behaviours needs to be investigated. Fourth, other aspects of authorial identity and plagiarism would benefit from in-depth qualitative analysis of the discourses used by stakeholders in the

higher education context. Finally, IRT modelling of the SABAS and other statistical techniques could be used to further develop the measure and evaluate further aspects validity and reliability.

Other approaches to authorial identity

The research presented in the current thesis was conducted from a psychological perspective focusing on the attitudes and beliefs of students and academics. Previous research from a socio-linguistic perspective has used textual indicators of authorial identity to indicate that there are differences in authorial identity between expert and novice academic writers (e.g., Hyland, 2002). Norton (1990) has also used textual analysis to identify features of student academic writing that are associated with higher quality student essays. These methods could be used to examine the textual features of academic writing that indicate authorial identity. Authorial identity approaches to plagiarism represent a complementary, or even alternative, conceptualisation of plagiarism to currently dominant policies. As such, many of the methods used to examine plagiarism would be useful for exploring authorial identity.

Psychological approaches have furthered understandings of plagiarism behaviour and the moralistic connotations of the term (e.g., Roig, 2001; Ashworth et al., 1997); these have been complemented by other approaches that conceptualise plagiarism as a linguistic feature of text, in order to avoid the negative psychological connotations related to academic offenses (Pecorari, 2008). A similar approach to authorial identity could identify linguistic markers of authorial identity in different contexts and genres of text. Analysis of texts using software could also support the authorial identity approach's validity as pedagogy for plagiarism. Text-matching software is becoming commonplace in higher education institutions, despite findings that it can have little deterrent effect on student plagiarism (Youmans, 2011). However, use of this software could serve a research purpose for calculating the text-match scores for work that is also rated for authorial identity. Evidence that higher authorial identity is related to lower percentages of matched text would support the adoption of authorial identity approaches in universities.

A number of plagiarism researchers have explored the social structures and discourses around plagiarism that is construed as an academic offence (e.g., Howard, 1999; Kaposi & Dell, 2012). Others have analysed policy documents and regulations that focus on plagiarism (e.g., Macdonald & Carroll, 2006; Sutherland-Smith, 2011). Similar approaches to authorial

identity could reveal how institutions, academic departments and disciplinary discourses influence authorial identity. Although authorial identity is not a construct or term that is explicitly mentioned in academic policies, there are relevant topics that are the focus of pedagogic materials. For example, course descriptors that identify critical analysis, independent writing and academic values could serve as a starting point for document analyses of institutional policies. Furthermore, publisher definitions of authorship and guidelines for assigning authorship could reveal how disciplines construct notions of authorial identity within these communities.

Testing the psycho-social model of authorial identity in other samples

Although the testing of the SABAS on a multidisciplinary student sample is a strength of the current studies, development of the psycho-social model of authorial identity could be supported by evaluating the model in different samples. The authorial identity approach to plagiarism has attracted interest from educators in healthcare disciplines (Maguire et al., 2013) and accounting (Ballantine & Larres, 2012). Evaluating the general models of authorial identity proposed in the current thesis with these disciplines and others would establish the utility of the authorial identity approach in these subject areas. Studies examining authorial identity in a narrow disciplinary context could also identify nuances of authorial identity that are specific to writing within particular subjects. Furthermore, researchers have also examined authorial identity in students with dyslexia using the SAQ model of authorial identity (Kinder & Elander, 2012). Identifying the psycho-social model of authorial identity's relevance to dyslexic populations would support the development of pedagogy for students with special educational needs.

Students with English for Speakers of Other Languages (ESOL) have been identified as a population at higher risk of committing plagiarism (Deckert, 1993). Recent researchers have disputed longstanding assumptions that increased rates of plagiarism amongst ESOL students are due to cultural differences in understandings of textual ownership (Liu, 2005; Li, 2013). Abasi et al. (2008) suggested that problems with plagiarism could be due to authorial identity issues. The developments presented in the current thesis should be applied to investigate this particular population. In particular, the SABAS model can be tested in ESOL samples to examine the validity of the SABAS measure with ESOL students. Further research could attempt to identify whether problems with authorial identity are linked to higher incidences of plagiarism in ESOL students.

Models of authorial identity should also be tested in further education samples to establish the scope of instruction needed during transition periods to higher education. Previous research has identified that transition from further to higher education is characterised by difficulties with writing (Reddy et al., 2008), understanding assessment criteria (Elander et al., 2011) and learning strategies (Wingate, 2007). Understanding authorial identity in further education students could be a key to preventing student plagiarism before they reach university, rather than having to deter and detect plagiarism with draconian punishments and threats of failure. Another suitable sample that has attracted little interest from authorial identity researchers is that of professional academics themselves. Study one identified that academics can hold varying conceptions of authorial identity. These findings suggest that it should not be assumed that published research authors would automatically identify with the role of author. Moreover, professional academics are as susceptible to accusations of plagiarism as students and the stakes can be somewhat higher for them. Therefore, authorial identity in academics is an important topic to investigate with further research.

Authorial identity in relation to other aspects of writing

The psycho-social model of authorial identity presented in previous sections has been conceptualised as connected to a number of other constructs. Although links have been identified with many important constructs, further research could focus on authorial identity's connection to other pedagogic concepts. Authorial identity has been linked with approaches to writing in previous research (Pittam et al., 2009). Although the current studies did not identify writing approaches as a core component of authorial identity, the new psycho-social model can be theorised to link with approaches to writing (Lavelle & Zuercher, 2001) and approaches to learning (Biggs, 1987). Research using Lavelle's (1993) Inventory of Processes in College Composition (IPCC) and the SABAS could empirically test for a correlation between these constructs.

Epistemological beliefs regarding knowledge and writing could also be linked with authorial identity. O'Siouchru and Norton (2013) have identified that students holding similar epistemological beliefs to their tutors perform better in their studies. Dweck (2000) has also identified that educational performance and motivation is mediated by epistemic differences in conceptions of intelligence and ability. Individuals who consider their abilities as fixed entities are more likely to give up in the face of difficult challenges, whereas those who

conceptualise their skills as incrementally developed through practice remain highly determined when engaging with challenging tasks. Furthermore, Sommers and Saltz (2004) found that students conceptualising themselves as novice writers showed greater improvement of writing in a higher education context. Student epistemologies in relation to writing could mediate the development of authorship and authorial identity.

Research could also attempt to explain some of the unpredicted findings of study three. The correlation between the 'valuing writing' SABAS subscale and Ballantine et al.'s (2013) 'lack of confidence' SAQ subscale suggested that valuing writing highly could be linked with negative self-belief. In addition, further examination of stage of study effects and use of longitudinal designs could provide more information about fluctuations in authorial identity that have also been reported in a number of studies (e.g., Ballantine & Larres, 2012; Pittam et al., 2009).

Testing for predictive validity conducted as part of study three showed that the SABAS was unable to predict educational achievement. However, further research could use a larger number of educational measures to examine the predictive potential of authorial identity in a regression model.

Discursive psychology and authorial identity

The qualitative analysis in study one presented a broad overview of academics' understandings of authorial identity. Previous research has also used thematic analysis to qualitatively analyse student understandings of authorship and plagiarism (Pittam et al., 2009). Furthermore, study one identified that academics hold varied conceptualisations of authorial identity and socially construct their understandings of authorship. In-depth discursive analysis would identify the ways that language is used to construct notions of authorial identity and student writers. Comparing the findings from study one with focus group findings of Pittam et al. (2009) highlights that academics and students understand authorial identity in different ways. In addition, study one showed that academics hold different understandings of authorial identity in students when compared with authorial identity in their own professional communities.

Discursive psychology (Edwards & Potter, 1992) could be used to analyse naturally occurring data in higher education contexts or interviews conducted with academics and

students. Examples of naturally occurring data could include meetings scheduled regarding plagiarism accusations, teaching sessions focussed on plagiarism, face-to-face feedback sessions with students or discussions of authorial identity between academic colleagues. Identifying discoursal constructions of authorial identity in these contexts could help improve the ways that messages about authorial identity are conveyed to novice writers. In addition, it would be particularly interesting to explore constructions of authorial identity and plagiarism in relation to each other. These concepts have been presented at opposite ends of a spectrum that places authorial identity and original writing at one end, and plagiarism with copying at the other (Pittam et al., 2009); however, the relationship between these constructs is unlikely to be simple and straightforward. Plagiarism has been recognised as a socially constructed interpretation of writing (Chandrasoma et al., 2004) and the current thesis adopts a similar perspective in relation to authorial identity. The interaction between these constructs is likely to be complex, socially dependent and worthy of further qualitative investigation.

Further psychometric evaluations of the SABAS model

The CTT methods used in development and validation of the SABAS present a reliable and valid measure alongside a parsimonious measurement model. These foundations can be used to further understanding of authorial identity as a psychological construct with psychometric theory. There are a number of different avenues that are suitable for this endeavour. Evaluation of the SABAS with IRT modelling and Rasch analysis would be a suitable starting point. However, there are other techniques that could also provide useful insights.

The SABAS's utility could be improved by further administering the measure to a larger sample of students. This would address some of the limitations outlined in previous sections by collecting data from disciplines that were underrepresented in the current studies. Additionally, this data would add to the information available for standardisation of the SABAS. Means and standard deviations are available for SABAS total scores and SABAS subscale scores across the two studies (see Table 54).

Table 54. Mean SABAS scores across study two and study three

	Study two		**Study three**	
	Mean	SD	Mean	SD
Authorial confidence	4.63	.58	4.74	.62
Valuing writing	5.42	.55	5.30	.64
Identification with author	4.45	.85	4.37	.89
SABAS total score	4.82	.49	4.75	.58

These scores show that the means and standard deviations do not differ substantially across the two samples, suggesting that they could serve as the basis for standardisation of the SABAS model. However, this would need to be supported with additional research identifying the links between authorial identity and student writing. Standardising the SABAS would allow researchers to identify respondents with unusually high or low scores, but this would not serve a practical purpose unless authorial identity's interaction with other learning behaviours had been established. Additional data would facilitate development of the SABAS as a possible diagnostic instrument in future.

Combined with further research examining the link between authorial identity and writing outcomes, standardisation of the SABAS could allow tutors to identify students in need of further support with writing and authorial identity. Cluster analysis (Everitt, Landau & Leese, 2001) could also identify groups of students with similar patterns of authorial identity as measured by the SABAS. For example, these techniques could suggest that students with low 'valuing writing' scores were more likely to be accused of plagiarism, but students with low scores on the other two SABAS subscales were not at risk.

Further psychometric analyses could also be conducted with items dropped during the analysis in study two. Although the stringent retention criteria ensured that the SABAS is a statistically robust measure, it is possible that this resulted in the loss of potentially useful information. However, the SABAS is the recommended starting point for any further attempts to investigate authorial identity. Compared with alternative measures, it is theoretically sound and statistically defensible. In order to enable further research on authorial identity, a list of the pool of items is included in Appendix 9.

The analyses conducted for the current thesis are also influential on scale development practices more generally. Mellenbergh (2011) has observed that test construction and test theory have been developing independently with little communication between scale developers and psychometric theorists. In fact, Borsboom (2006) presents a damning critique of scale development practices, suggesting that applied researchers rely on Principal Components Analysis (PCA) and statistically questionable methods. In particular, Borsboom argues that the dearth of Confirmatory Factor Analysis (CFA) studies validating measures is problematic and further suggests that this is due to the lack of CFA functionality in standard statistics packages, such as Statistics Package for Social Sciences (SPSS).

The availability of computational power and specialist software, such as R (R Core Team, 2013), has allowed the SABAS to be modelled using a combination of polychoric-based parallel analysis, Exploratory Factor Analysis (EFA) and CFA. The current thesis demonstrates that advanced psychometric methods can be applied by psychological researchers to develop and test measures robustly. Therefore, development of the SABAS is an example of successfully applying psychometric theory to an important topic of interest. Wilson (2013) has called for such use of psychometric techniques to close the gap between psychometricians and psychologists. With further development and validation, the SABAS could serve as an example for applied researchers aiming to develop useful and statistically robust models of psychological constructs. Rebuilding the partnership between the field of psychometrics and psychology is likely to be difficult (Sjitsma, 2006), but the SABAS represents an initial step along this path.

7.6 Summary

The current chapter has drawn together findings from all three research studies conducted as part of the thesis. Four key elements have been discussed: the main findings of the studies, pedagogical recommendations arising from the research, the strengths and limitations of the thesis and recommendations for future authorial identity research. In addition, a new psycho-social model of authorial identity has been presented. This model represents a new conceptualisation of authorial identity that is robust, valid and developed using a combination of qualitative research and psychometric theory.

The studies presented in the current thesis have methodological significance for the fields of psychometric assessment and pedagogic psychology. In addition, they develop and expand the authorial identity approach to student plagiarism by presenting a theoretical framework of authorial identity as a psychological construct. Further dissemination of the work from the studies in this thesis will promote the authorial identity approach to plagiarism. Crucial to this is the sharing of findings at academic conferences; a list of conference presentations arising from this thesis is included as Appendix 15. The psycho-social model has great potential to support research on authorial identity and develop pedagogies for plagiarism in higher education.

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